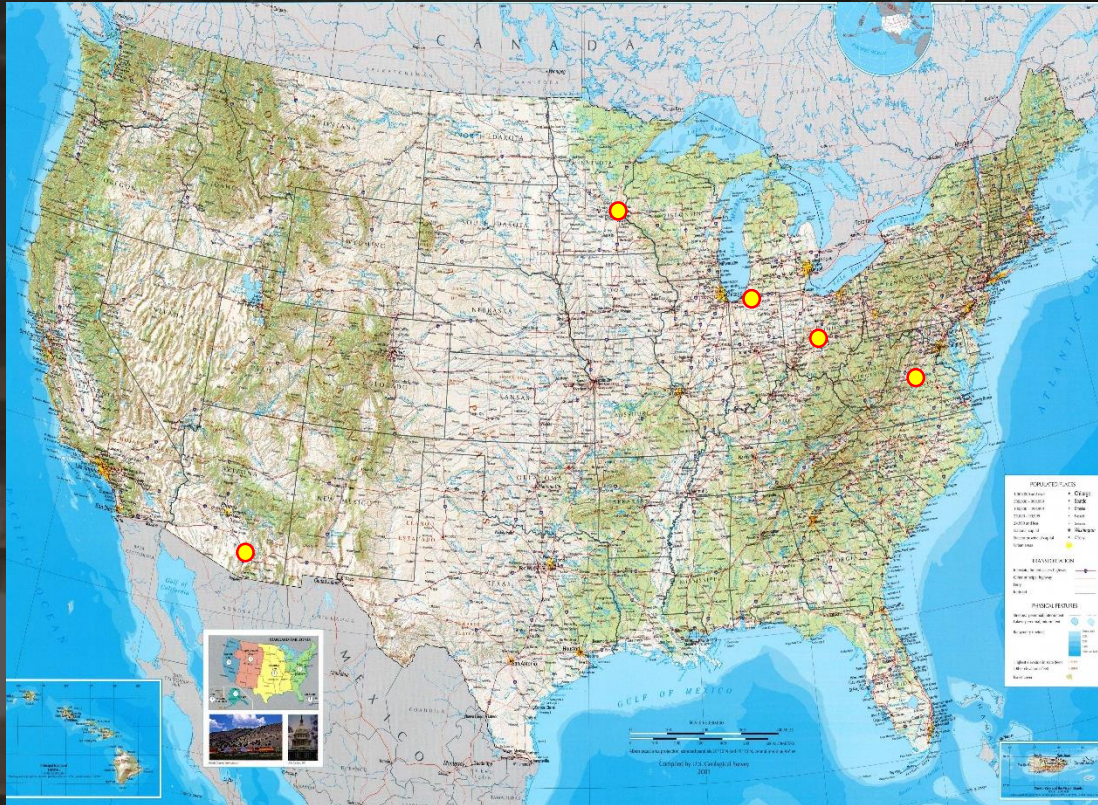




Current status of LBTO

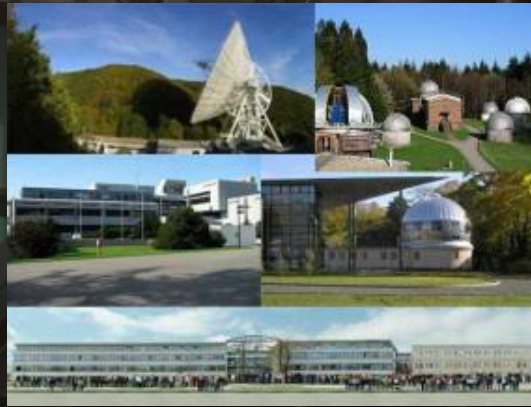
Christian Veillet - LBTO

The LBT partnership



Cultural and interest diversity:
more an asset than a burden!

LBTC - The Large Binocular Telescope Corporation



AZ	25.00%	AZ	26.25%
INAF	25.00%	INAF	25.00%
LBTB	25.00%	LBTB	25.00%
OSU	12.50%	OSU	15.31%
RC	12.50%	ND+UM+Uva	8.44%



LBTO

a Department of the University of Arizona

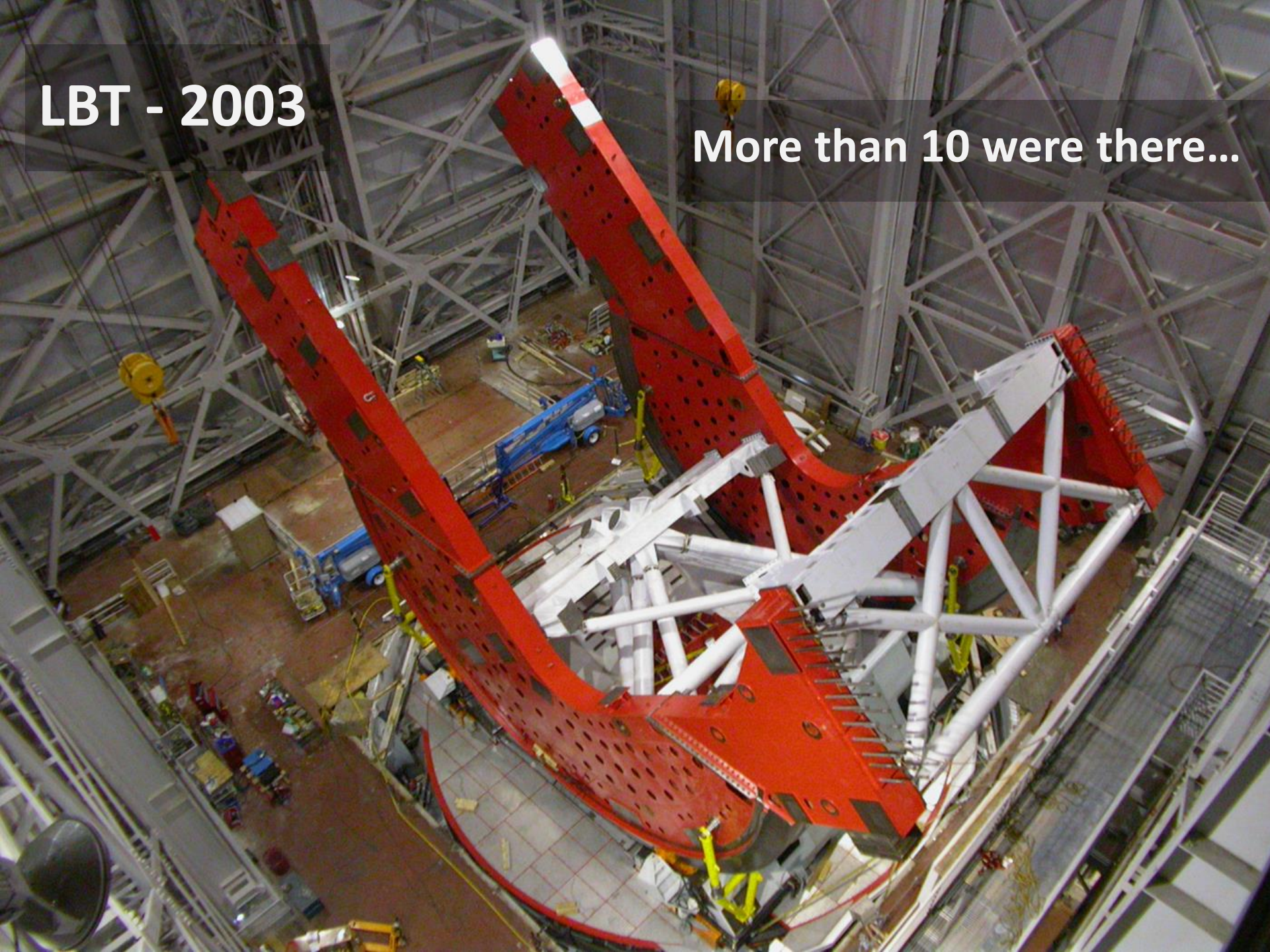
- 59 people by mid-2014
 - 20 mostly on the mountain
 - 14 Safford-based (mountain crew)
 - 3 telescope operators
 - 3 instrument technicians
 - 39 mostly in Tucson
 - 4 administration
 - 26 engineering
 - 10 scientists
 - 4 facility instrument support astronomers





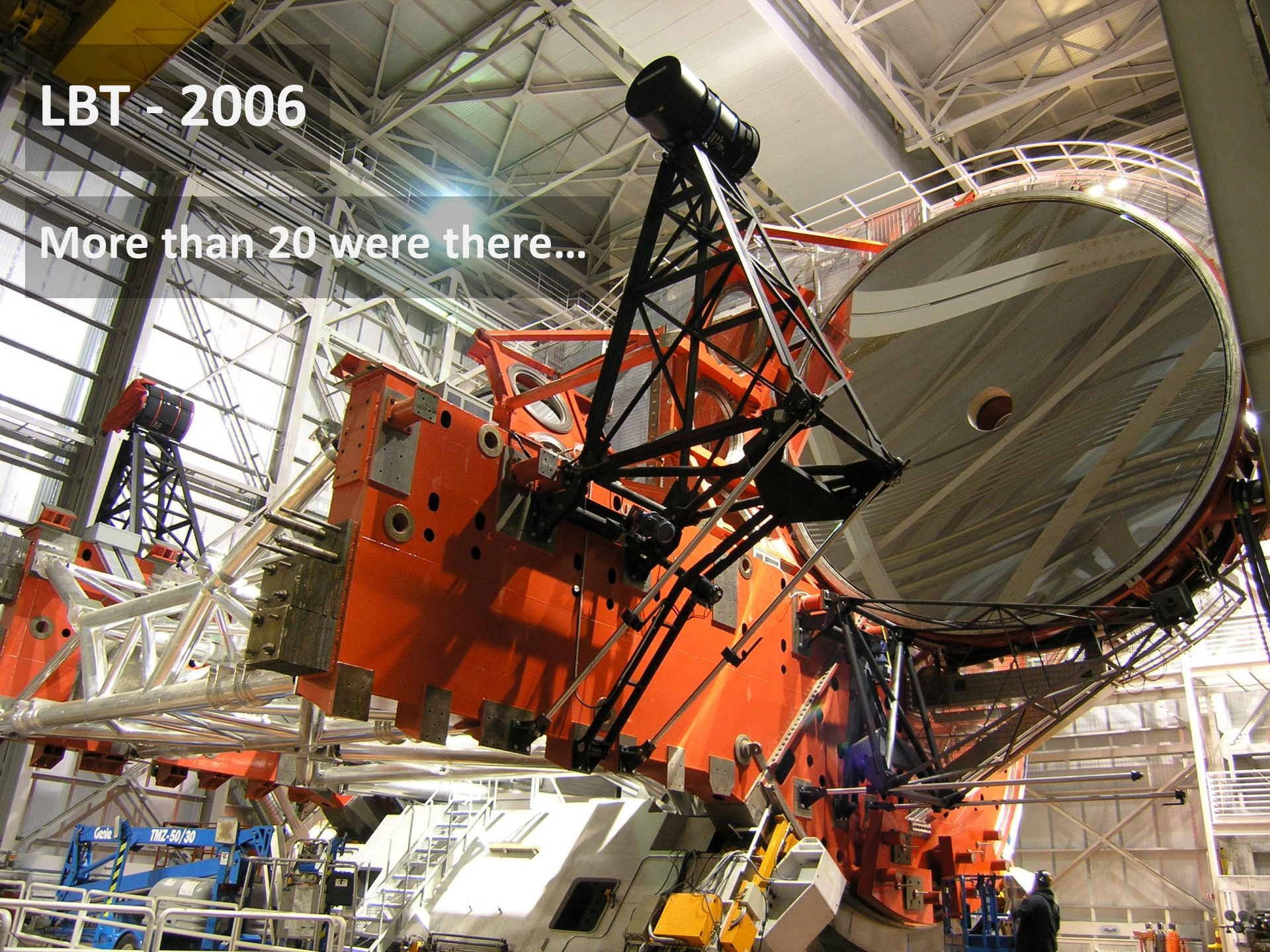
LBT - 2003

More than 10 were there...

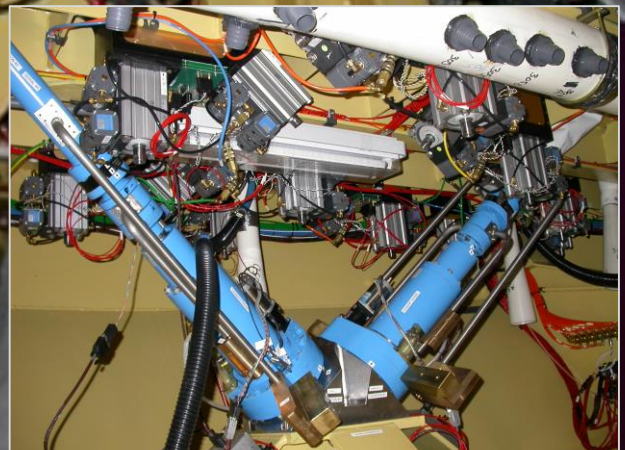


LBT - 2006

More than 20 were there...

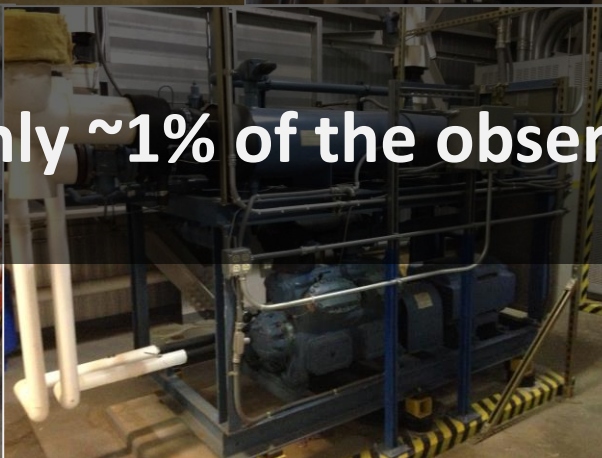
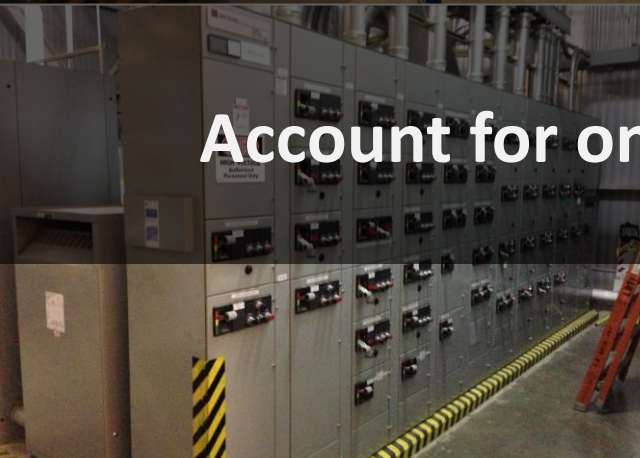








Facility – Telescope – TCS



Account for only ~1% of the observing time lost...



LBC Red

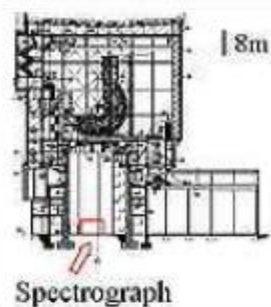
Thermal IR Nuller /
Beam Combiner

LINC/NIRVANA
Near IR/Visible
Beam Combiner

PEPSI 1

MODS 1

Spectrograph

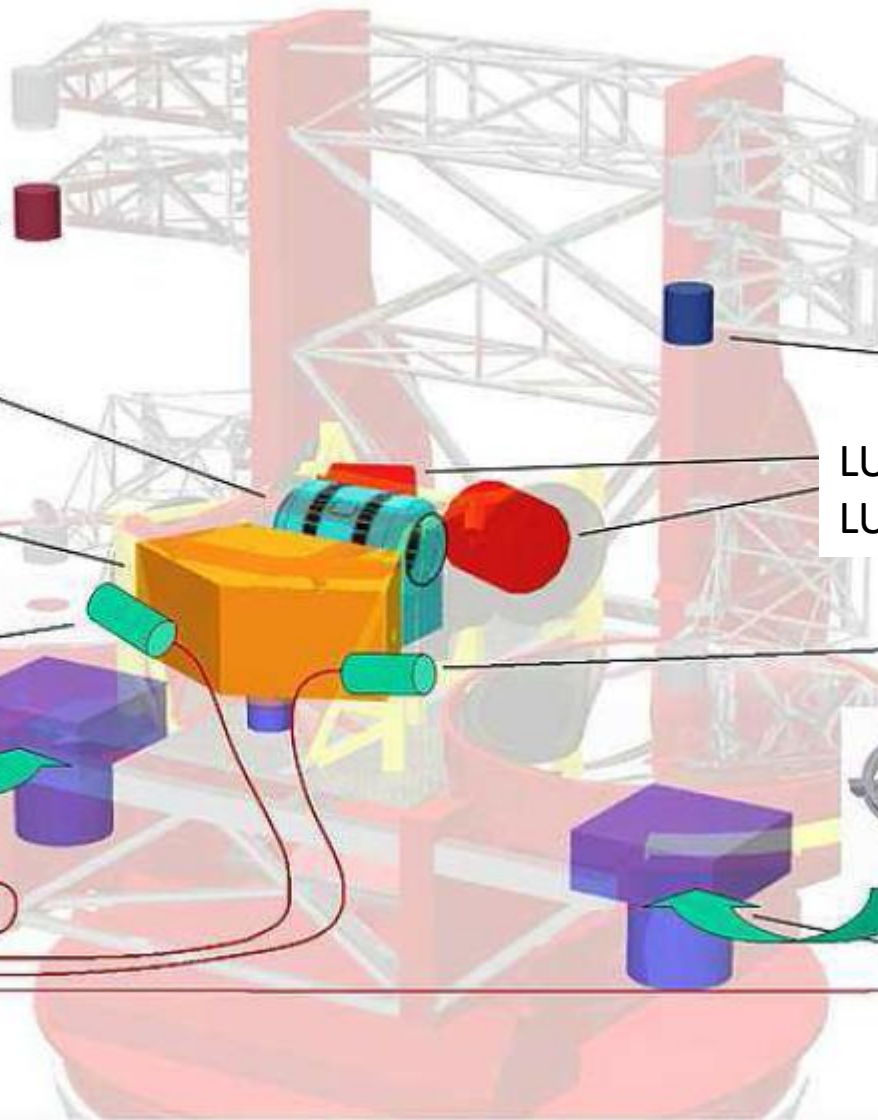


LBC Blue

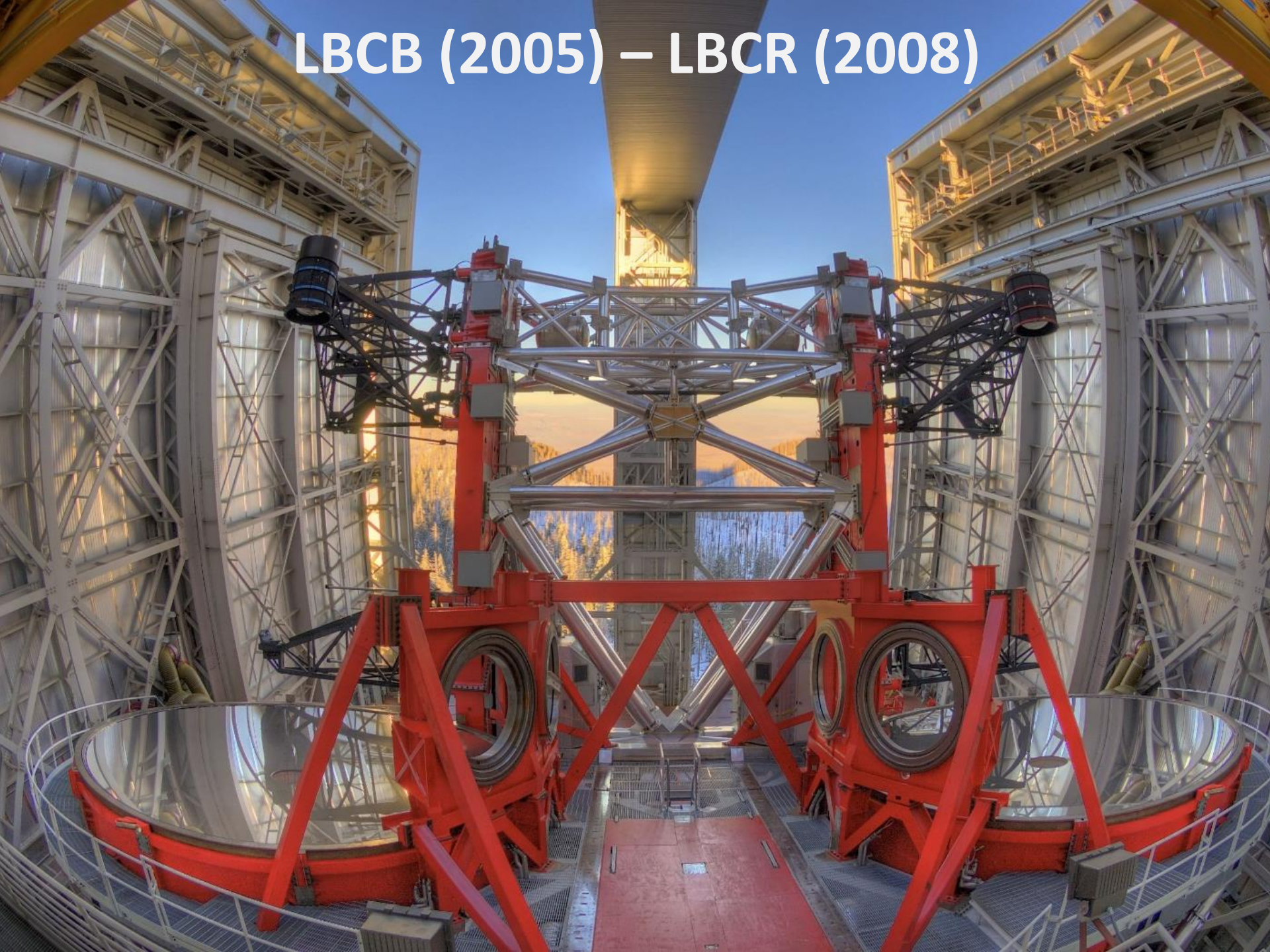
LUCI1
LUCI2

PEPSI 2

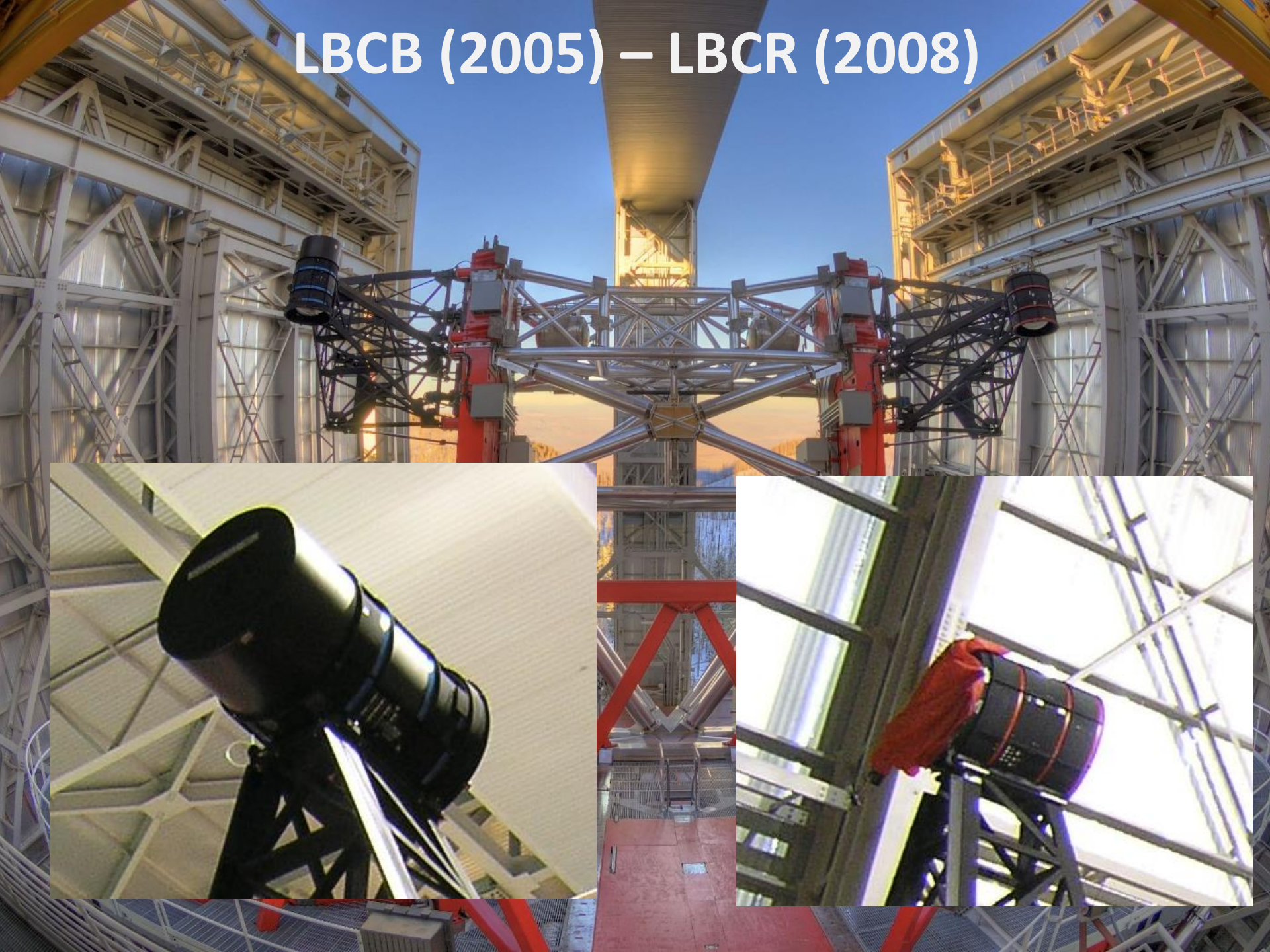
MODS 2



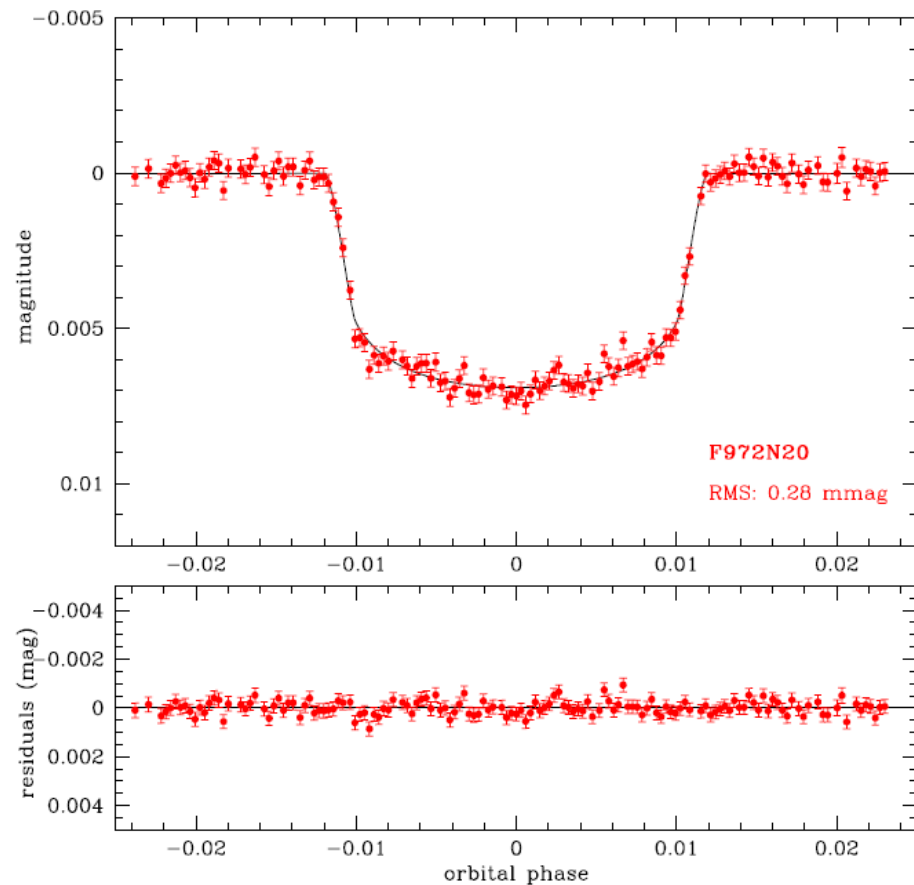
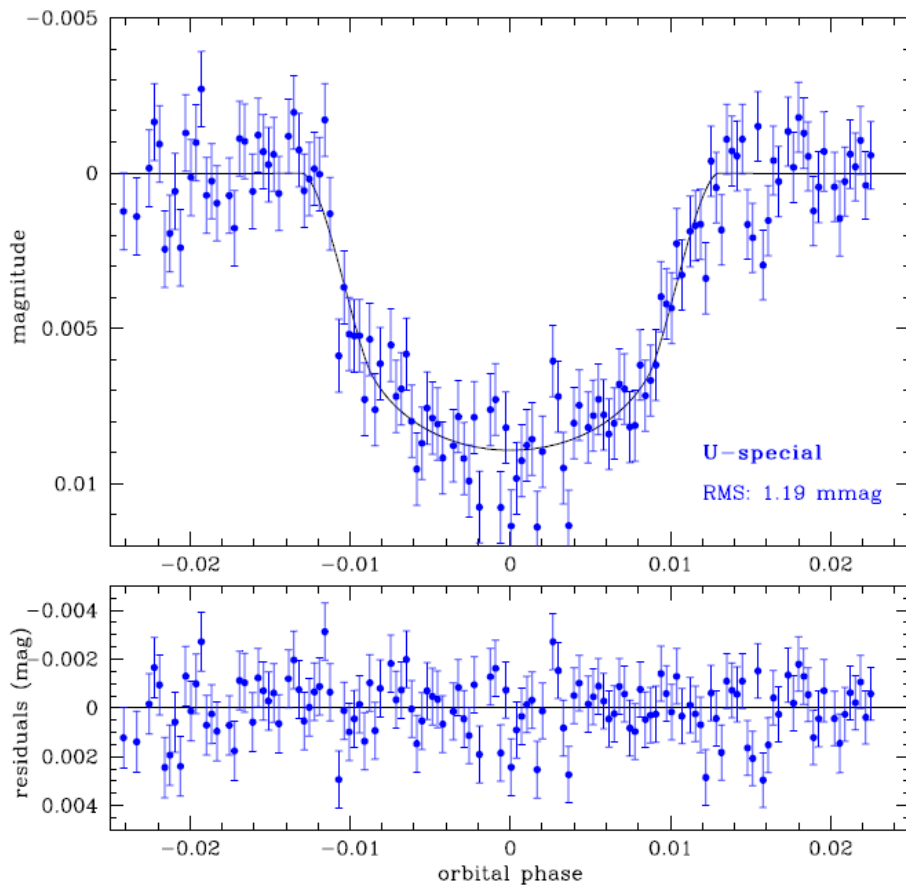
LBCB (2005) – LBCR (2008)



LBCB (2005) – LBCR (2008)



Simultaneous photometry in the ultraviolet ($\lambda_c = 357.5$ nm) and optical infrared ($\lambda_c = 963.5$ nm) allowed to detect a significant change in the effective radius of GJ3470b as a function of wavelength.

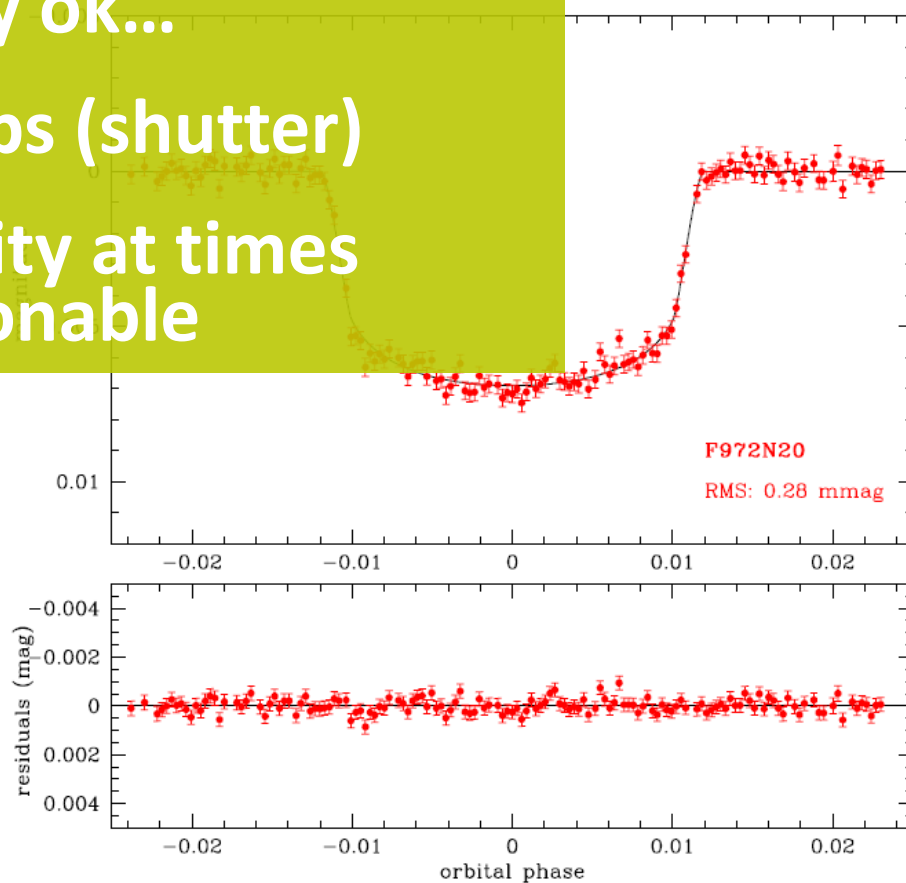
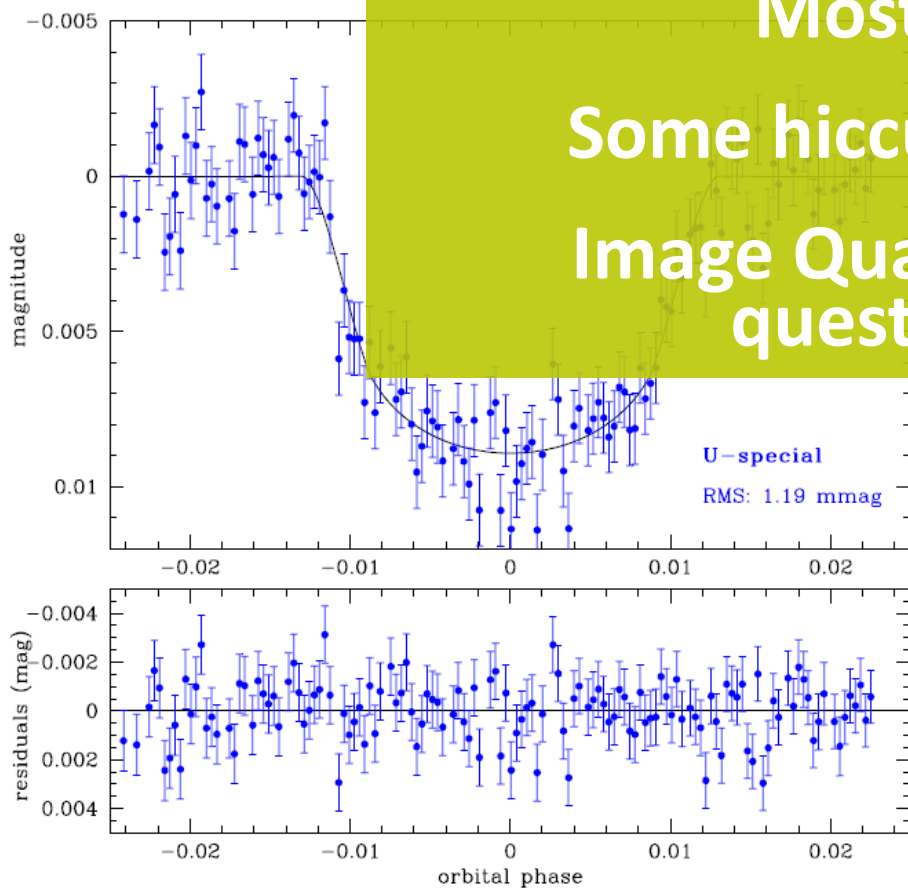


Simultaneous photometry in the ultraviolet ($\lambda_c = 357.5$ nm) and optical infrared ($\lambda_c = 963.5$ nm) allowed to detect a significant change in the effective radius of GJ3470b as a function of wavelength.

Mostly ok...

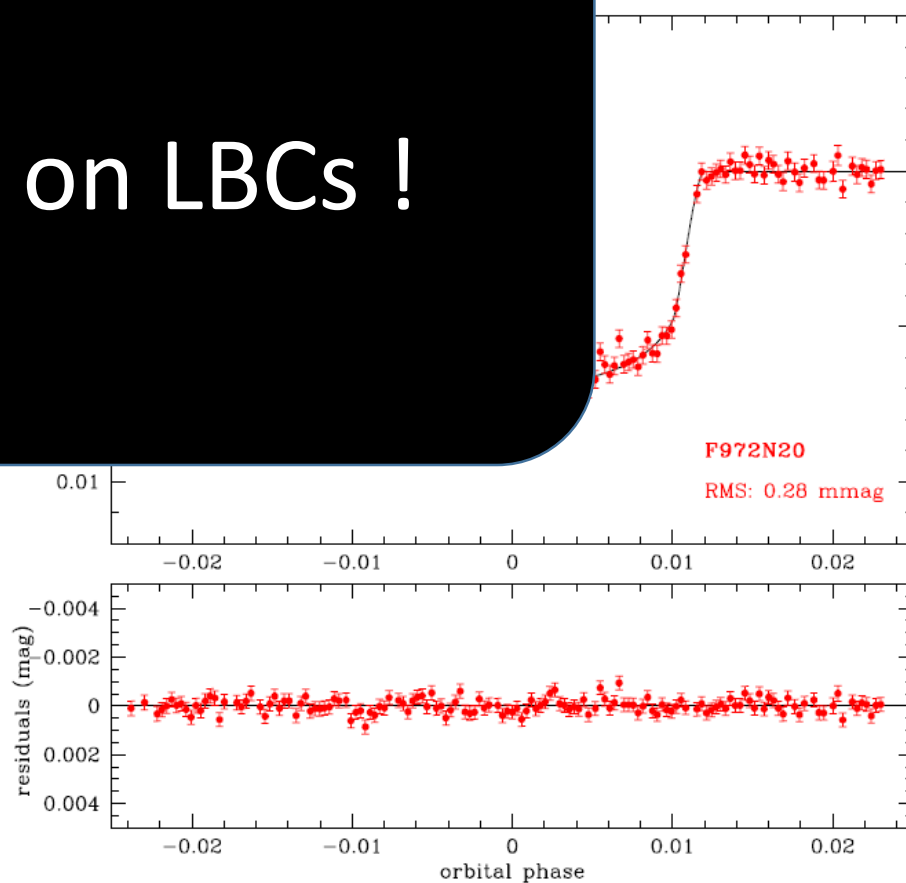
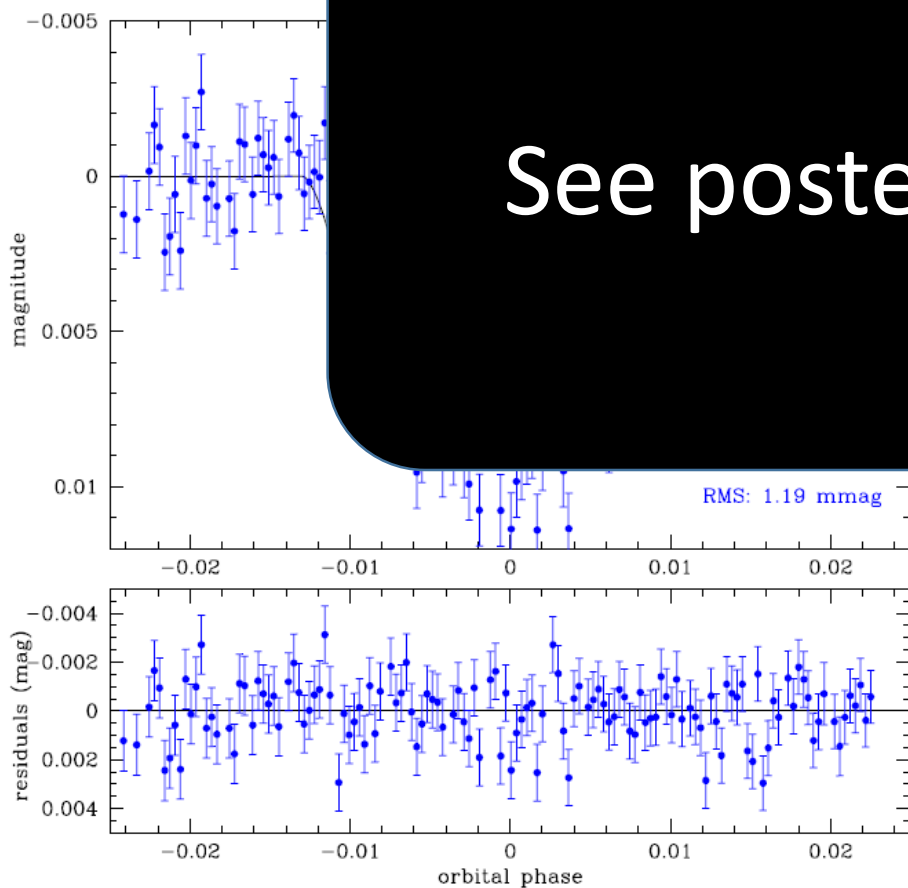
Some hiccups (shutter)

Image Quality at times questionable



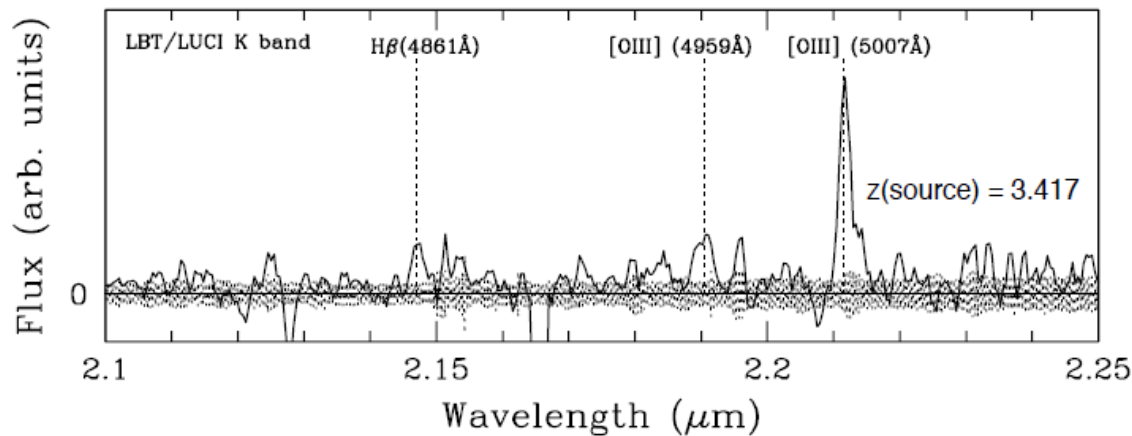
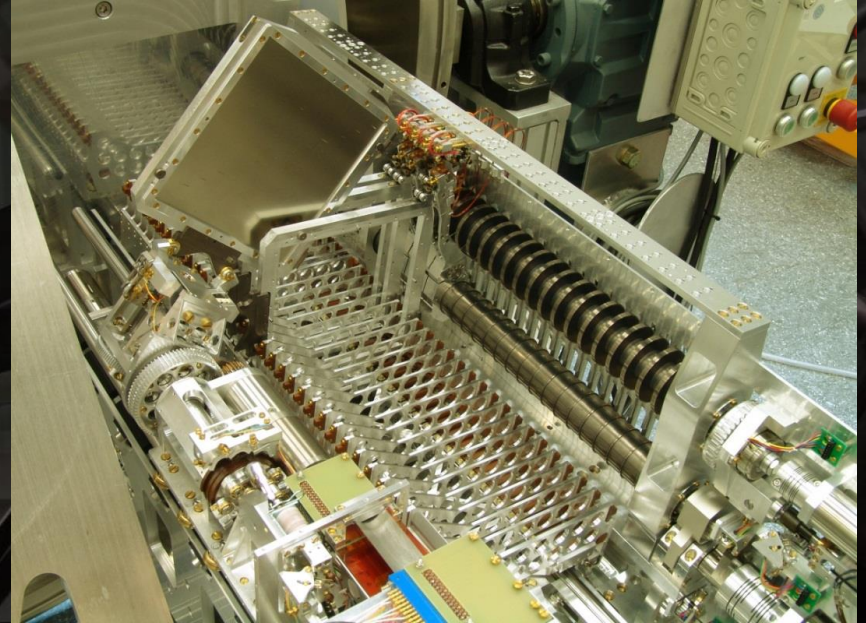
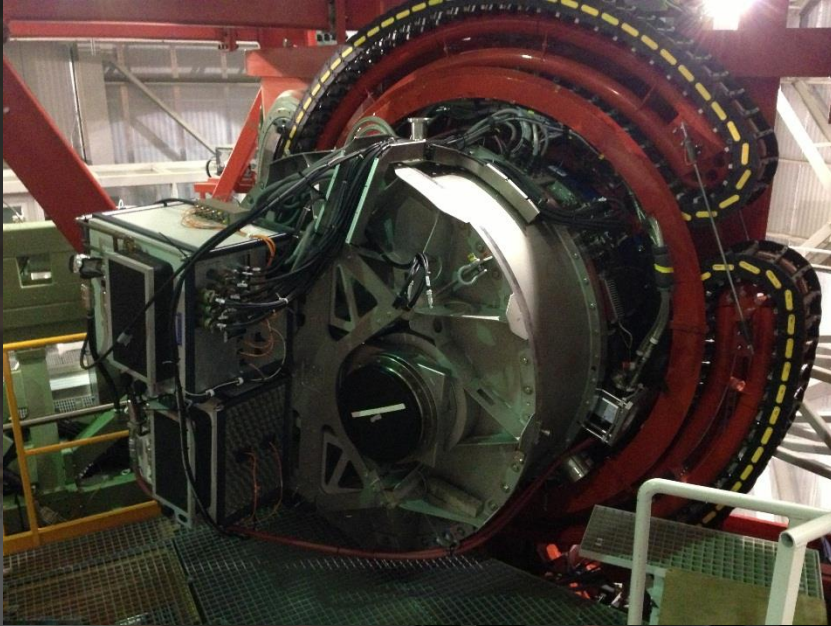
Simultaneous photometry in the ultraviolet ($\lambda_c = 357.5$ nm) and optical infrared ($\lambda_c = 963.5$ nm) allowed to detect a significant change in the effective radius of GJ3470b as a function of wavelength

See poster on LBCs !



LUCI1 - 2010

near-IR imaging + MOS (+ AO still to come)

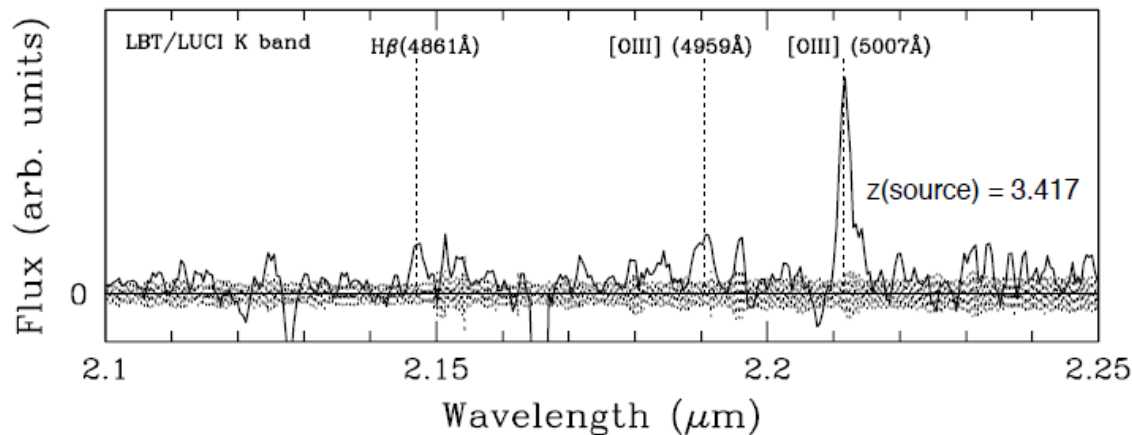


LUCI1 - 2010

near-IR imaging + MOS (+ AO still to come)



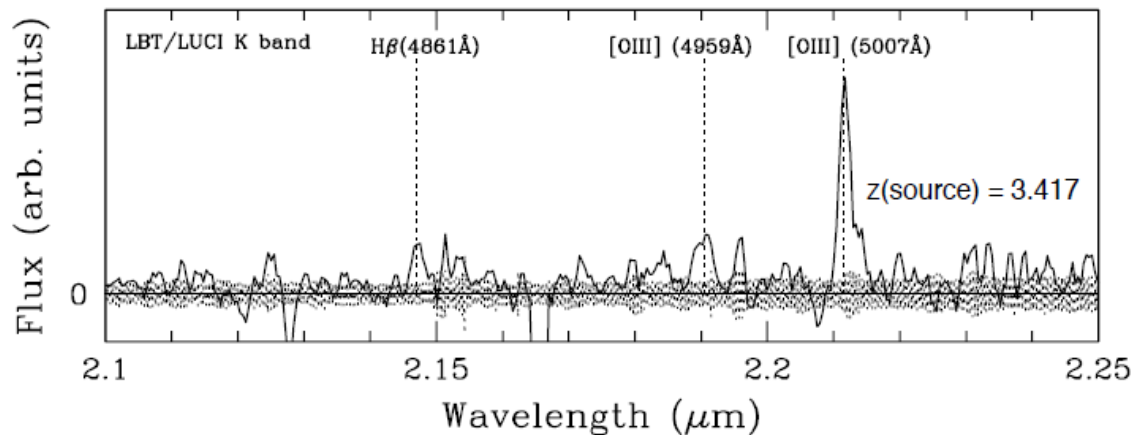
Fragile lately...
Too often unavailable over the
past year ☹



LUCI1 - 2010

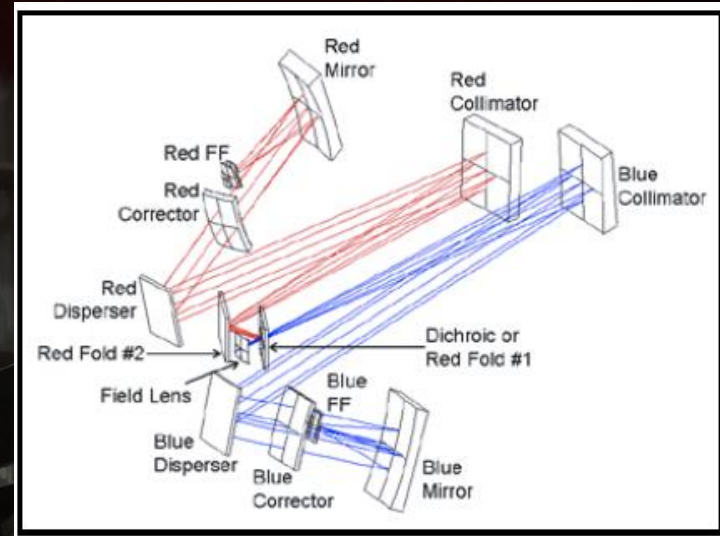
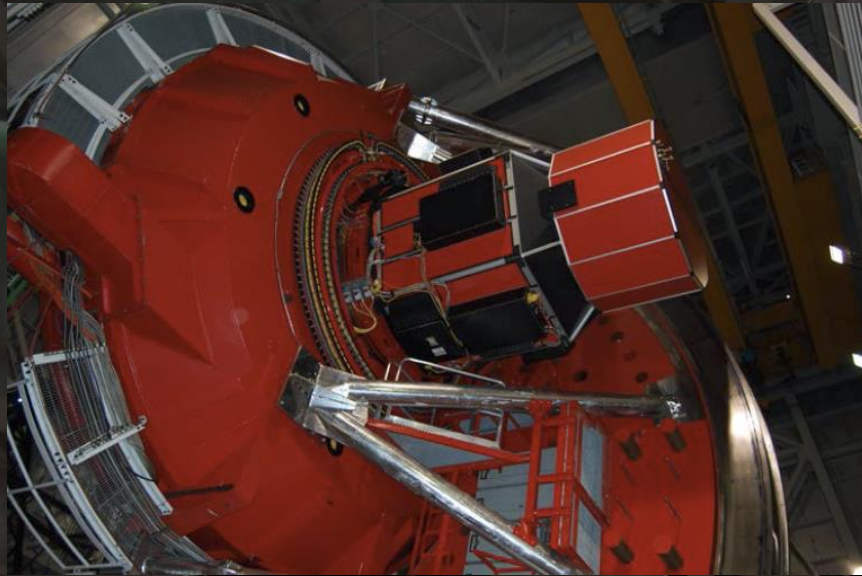
near-IR imaging + MOS (+ AO still to come)

See poster on LUCI1 !



Most distant
gravitational lens

MODS1 - 2011



r=24.8 mag

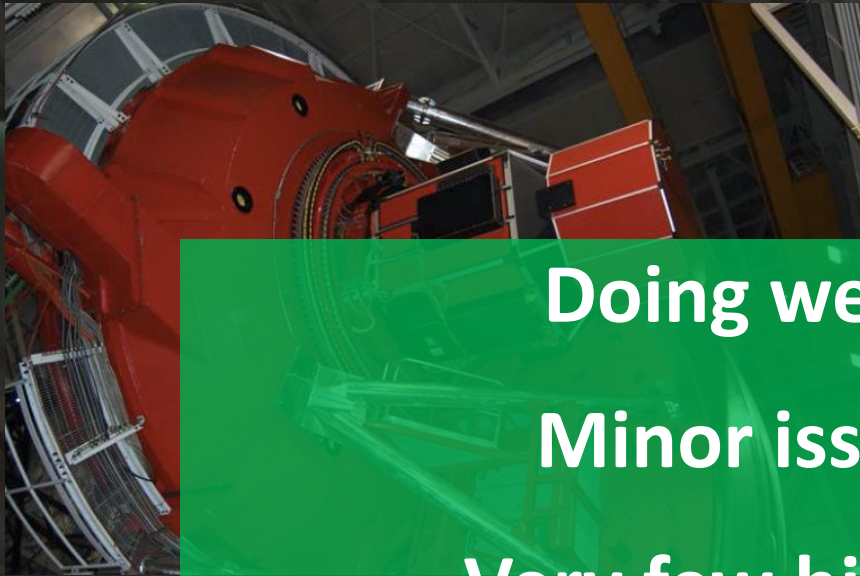


r=25.1 mag

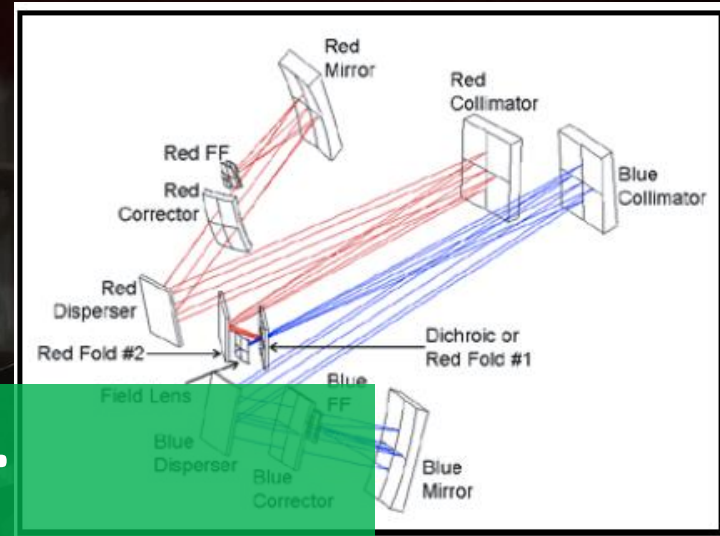


Ly α (z=4.1) Ly α (z=3.7)

MODS1 - 2011



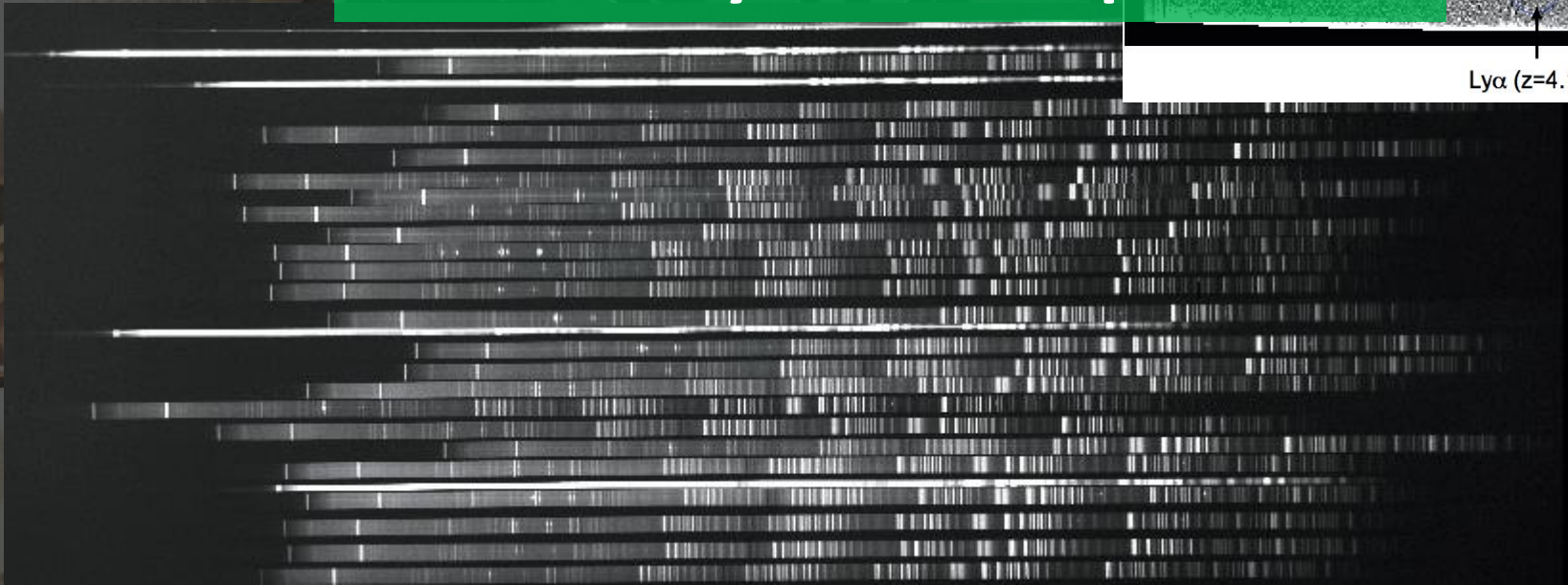
Doing well...
Minor issues
Very few hiccups



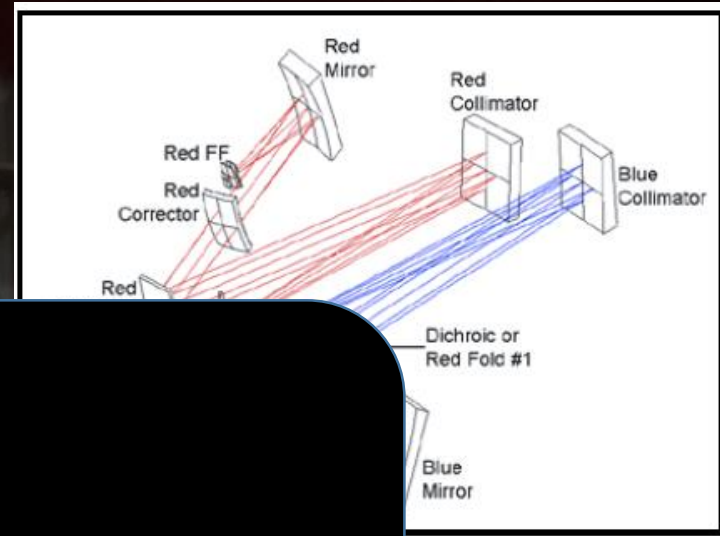
r=24.8 mag

r=5.1 mag

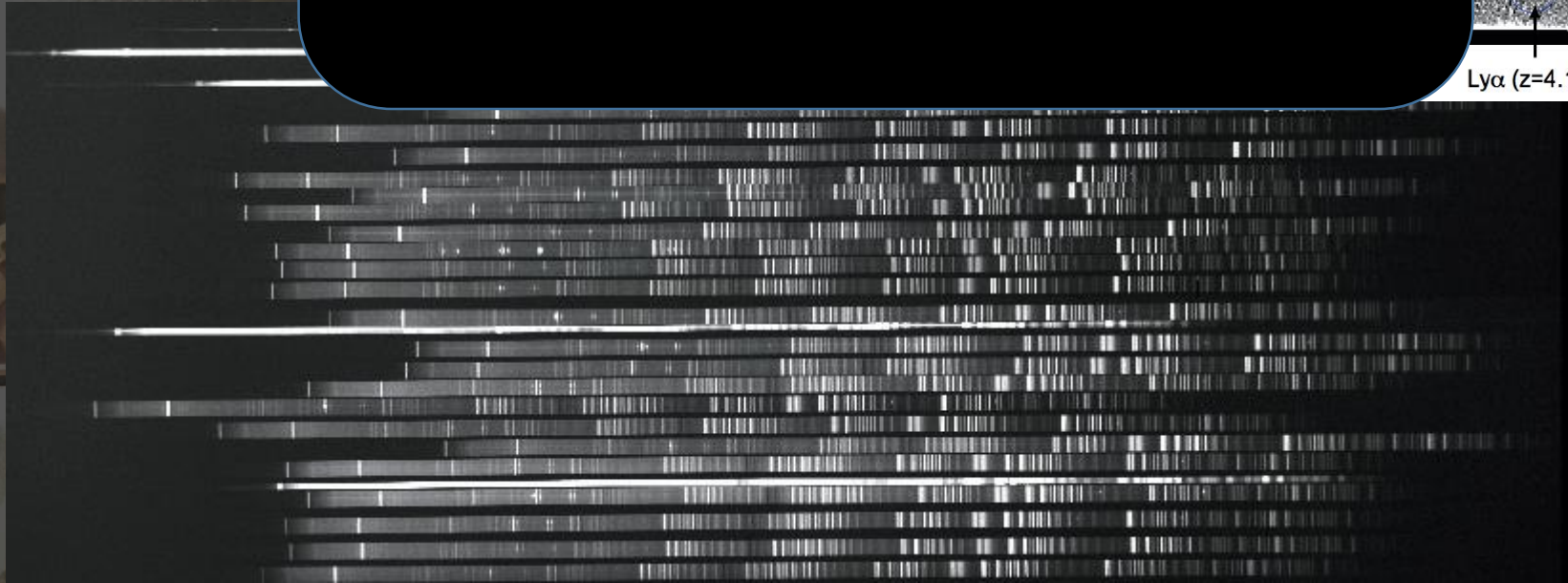
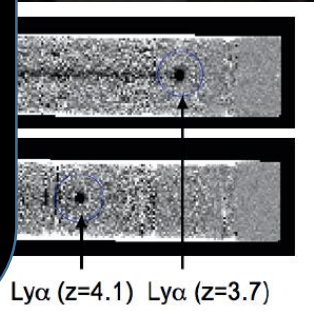
Ly α (z=4.1) Ly α (z=3.7)



MODS1



See poster on MODS1 !





LBC Red

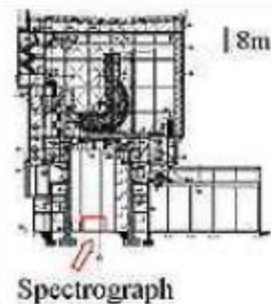
Thermal IR Nuller /
Beam Combiner

LINC/NIRVANA
Near IR/Visible
Beam Combiner

PEPSI 1

MODS 1

Spectrograph



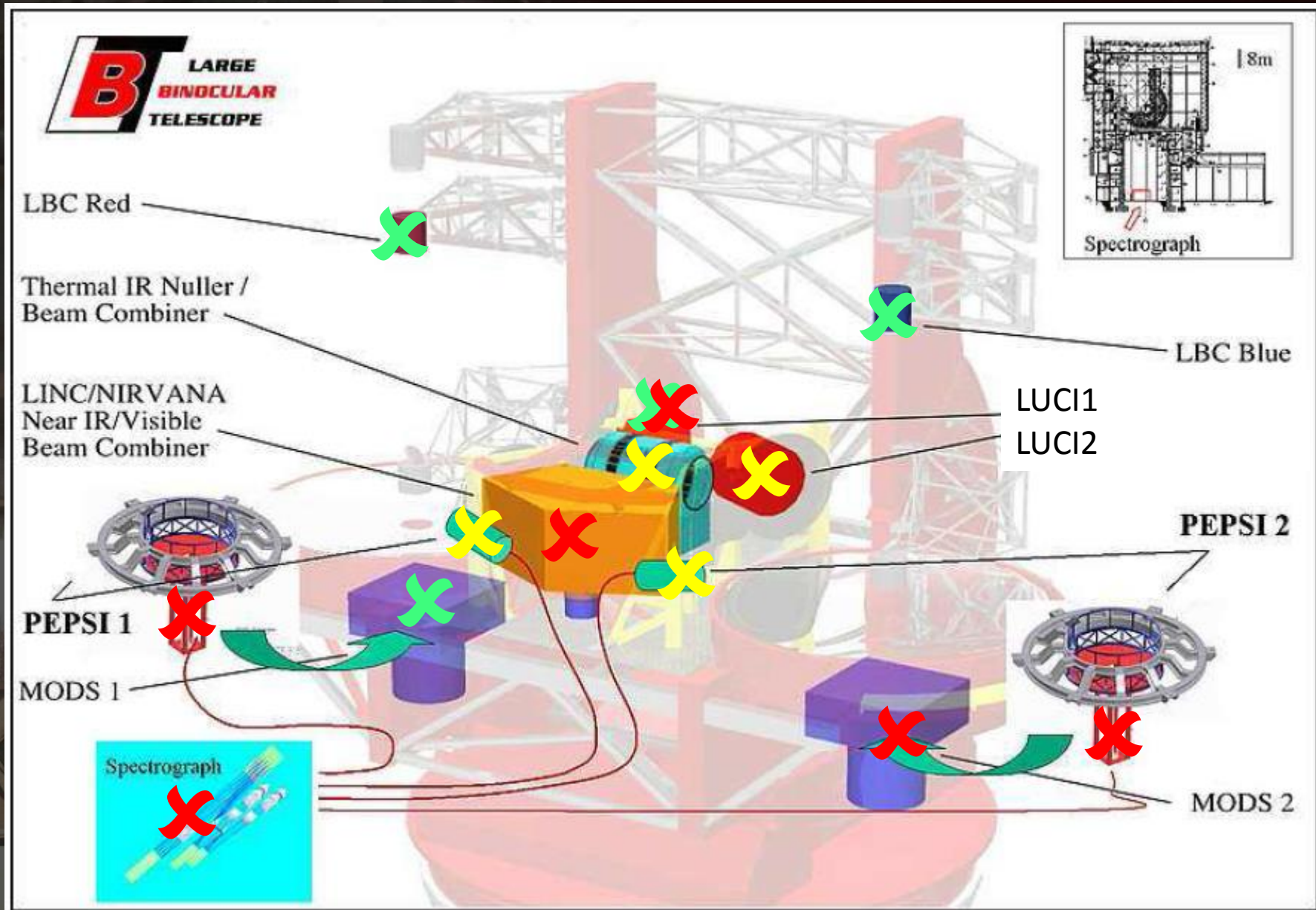
LBC Blue

LUCI1

LUCI2

PEPSI 2

MODS 2



Adaptive optics – 2 active secondaries!



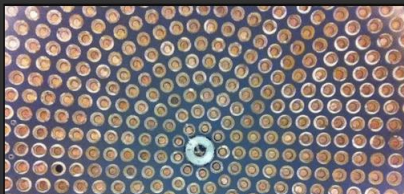
LBTO AdSec-DX recovery

Information on the recovery effort of the right-side adaptive secondary of the LBT.

Thursday, June 27, 2013

The actuators are back on the unit!

By the end of the day (Wed Jun 26 - 21:00 local time), all the actuators were back on the unit.



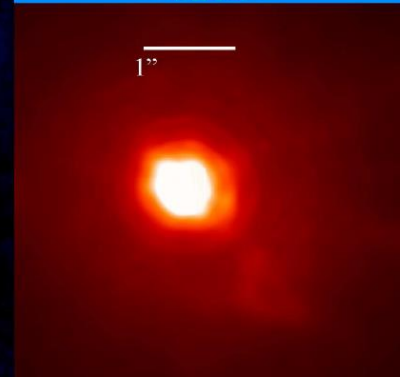
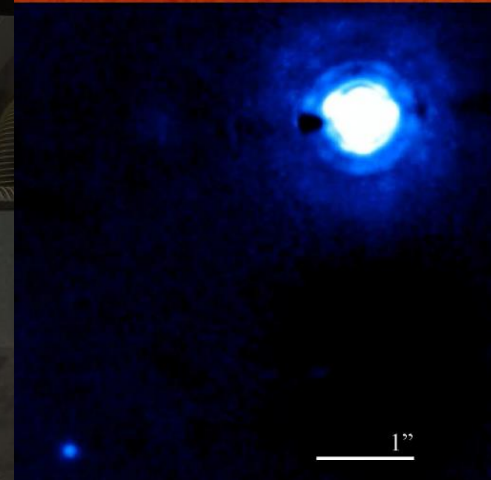
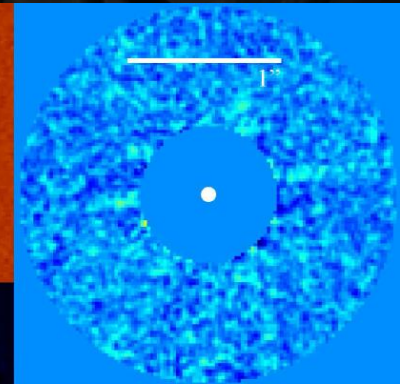
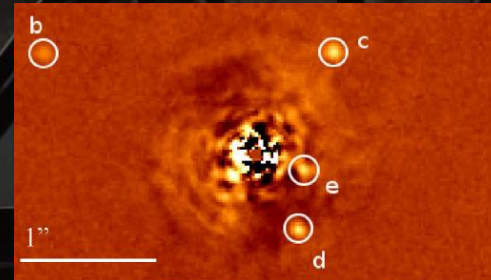
Blog Archive

▼ 2013 (11)

▼ June (8)

The actuators are back on the unit!
TS4 on the mountain!
Thin Shell #4 starting its journey...
More clearing done...
The long road to recovery
Assessing and cleaning...
Assessing the status of the shell
A first look at the "dropped" shell

► May (3)

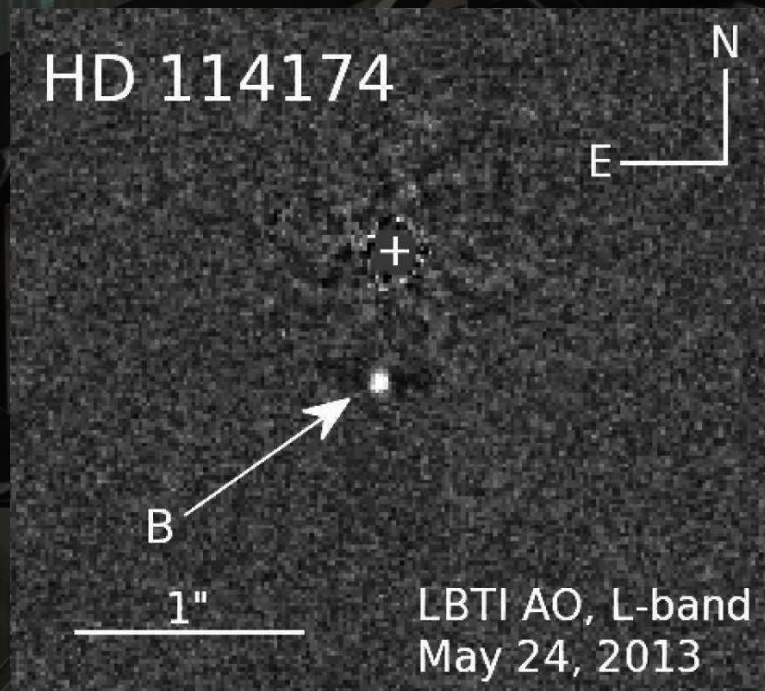


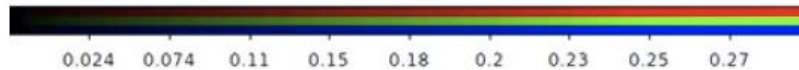
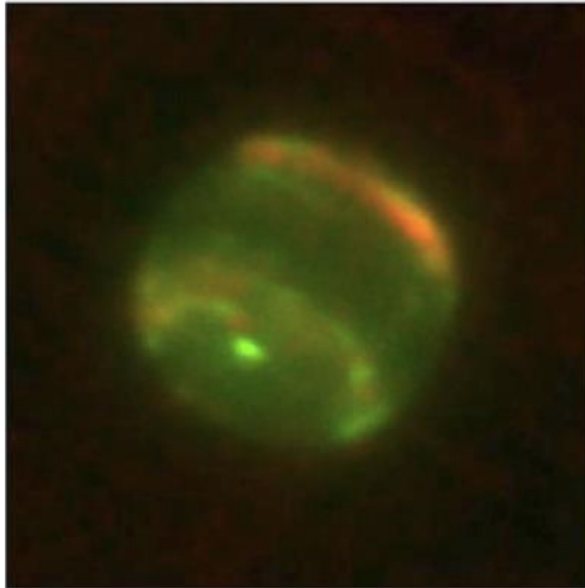
MID-INFRARED HIGH-CONTRAST IMAGING OF HD 114174 B : AN APPARENT AGE DISCREPANCY IN A
“SIRIUS-LIKE” BINARY SYSTEM

CHRISTOPHER T. MATTHEWS¹, JUSTIN R. CREPP¹, ANDREW SKEMER², PHILIP M. HINZ², ALEXANDROS GIANNINAS³,
MUKREMIN KILIC³, MICHAEL SKRUTSKIE⁴, VANESSA P. BAILEY², DENIS DEFRERE², JARRON LEISENRING², SIMONE
ESPOSITO⁵, ALFIO PUGLISI⁵

Draft version January 28, 2014

Previous attempts to image HD 114174 B at mid-infrared wavelengths using NIRC2 at Keck have resulted in a non-detection. Our new L'-band observations taken with the Large Binocular Telescope and LMIRCam recover the companion ($\Delta L = 10.15 \pm 0.15$ mag, $\rho = 0.675'' \pm 0.016''$) with a high signal-to-noise ratio (10σ). This measurement represents the deepest L' high-contrast imaging detection at sub-arcsecond separations to date, including extrasolar planets.





Before Camp, we arranged with Arizona astronomers to image weather patterns on Neptune in the near-infrared using the LBT's adaptive optics system. Even though we observed through very thick clouds, the resulting image had high resolution (0.04 arcseconds) and showed active storms and cloud bands that had not been witnessed for several years. *[Courtesy Vanessa Bailey and Andy Skemer.]*

Very good...

...but not fully operational yet
and failing too often ☹

Does not serve any facility
instrument

(PISCES and LBTI)

Before
weather patterns on Neptune in the near-infrared using the LBT's
adaptive optics system. Even though we observed through very thick
clouds, the resulting image had high resolution (0.04 arcseconds)
and showed active storms and cloud bands that had not been wit-
nessed for several years. [Courtesy Vanessa Bailey and Andy Skemer.]

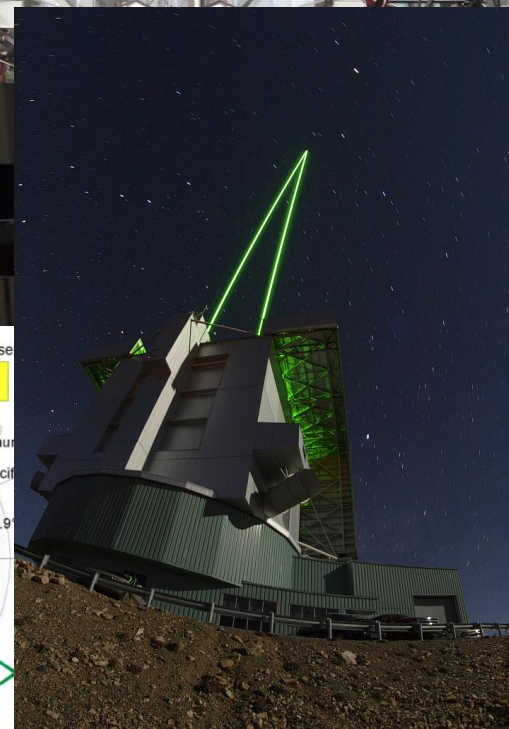
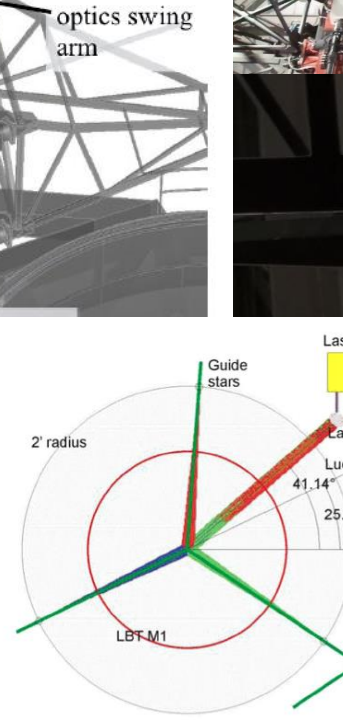
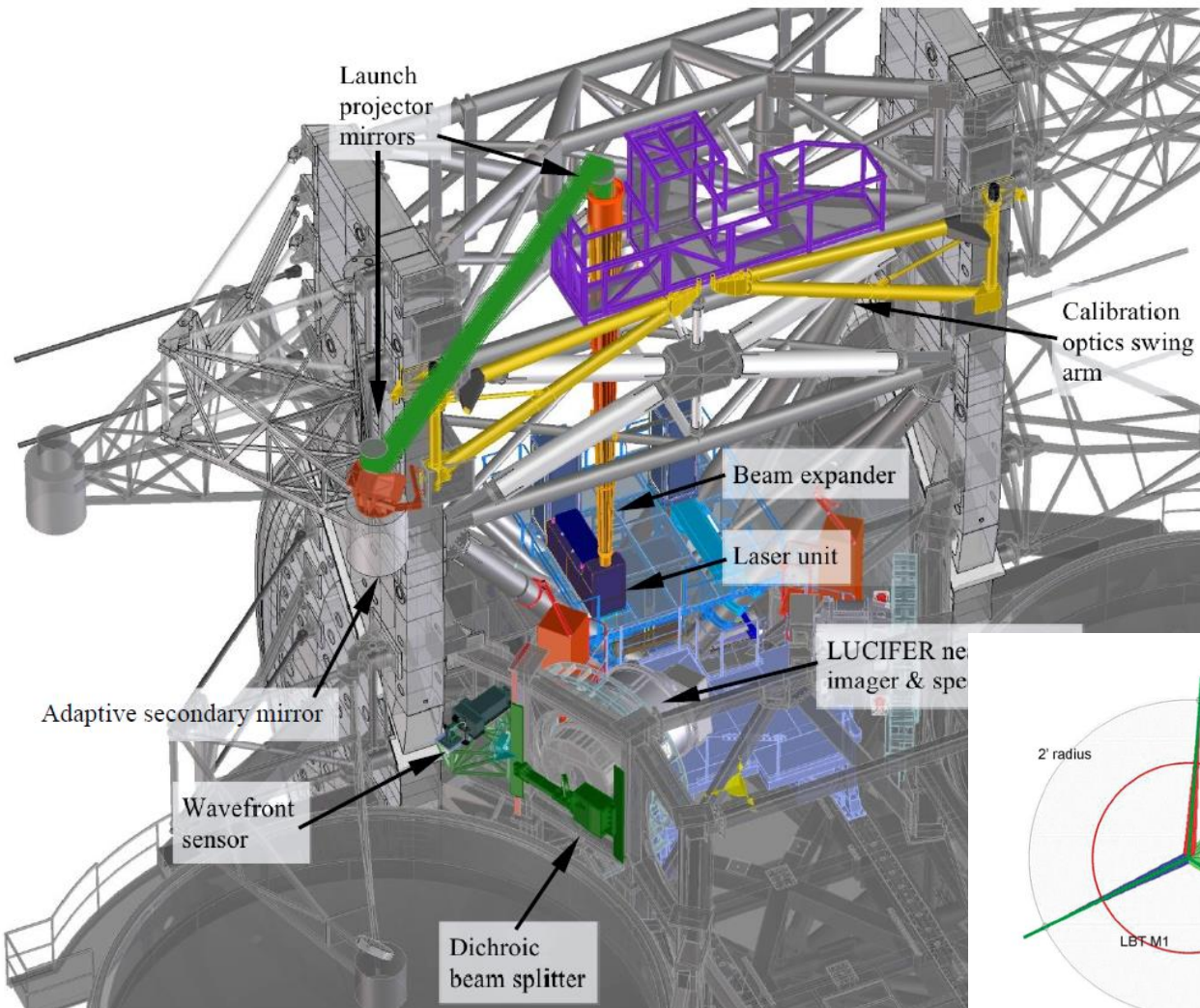


See poster on AO !

0.024 0.074 0.11 0.15 0.18 0.2 0.23 0.25 0.27

Before Camp, we arranged with Arizona astronomers to image weather patterns on Neptune in the near-infrared using the LBT's adaptive optics system. Even though we observed through very thick clouds, the resulting image had high resolution (0.04 arcseconds) and showed active storms and cloud bands that had not been witnessed for several years. *[Courtesy Vanessa Bailey and Andy Skemer.]*

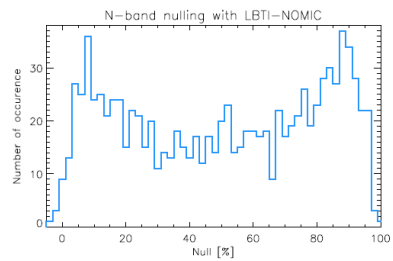
ARGOS (GLAO)



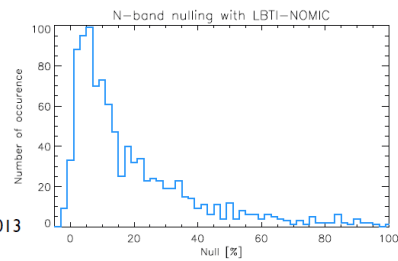


LBTI

Open Phase Loop



Closed Phase Loop



Dec. 30, 2013

LN-Pathfinder



Nights...

2014A

- 108 science nights

- 27 for

- AZ

- INAF

- LBTB

- 13.5 for

- OSU

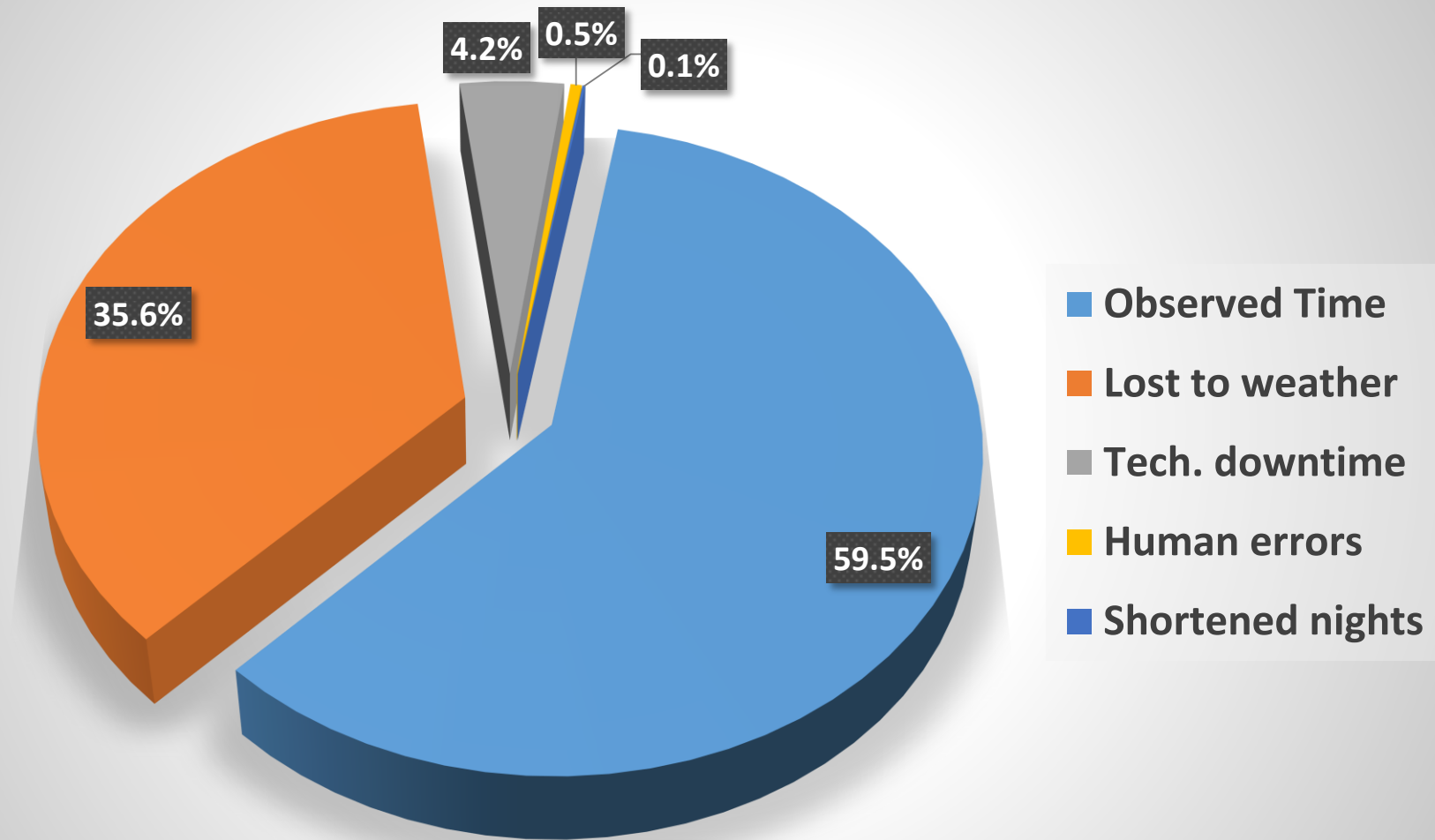
- RC

May	Tue	6	LBTI	1		51	14:36	
	Wed	7	LBTI	2		60	14:40	
	Thu	8	LBTI	3		70	14:44	
	Fri	9	LBTI	4		78	14:48	
	Sat	10	LBTI	5		86	14:52	
	Sun	11	LBTI	6		93	14:56	
	Mon	12	LBTI	7		97	15:00	
	Tue	13	LBT1/2	1	D1/2	FM	100	15:04
	Wed	14	C	1	ARGOS	FM	100	15:08
	Thu	15	C	2	ARGOS		97	15:12
	Fri	16	C	3	ARGOS		92	15:16
	Sat	17	C	4	ARGOS		84	15:20
	Sun	18	C	5	ARGOS		74	15:23
	Mon	19	LBTB	1		64	15:27	
	Tue	20	LBTB	2		52	15:31	
	Wed	21	LBTB	3			41	15:35
	Thu	22	LBTB	4			30	15:39
	Fri	23	LBTB	5			21	15:43
May	Sat	24	LBTB	6			13	15:47
	Sun	25	LBTB	7			7	15:51
	Mon	26	LBTB	8			2	15:55
	Tue	27	LBTB1/2	1	AZ1/2	NM	0	15:59 Night shared 1/2-1/2
	Wed	28	AZ	1		NM	0	16:03
	Thu	29	AZ	2			2	16:07
	Fri	30	AZ	3			6	16:11
	Sat	31	AZ	4			12	16:15
	Sun	1	AZ	5			18	16:19
	Mon	2	AZ	6			26	16:23
	Tue	3	O/RC1/2	1	E1/2		35	16:27 Night shared 1/2-1/2
	Wed	4	O/RC	1			44	16:30
	Thu	5	O/RC	2		54	54	16:34
	Fri	6	O/RC	3		63	63	16:38
	Sat	7	O/RC	4		73	73	16:42
	Sun	8	O/RC	5		82	82	16:46
	Mon	9	D	1		89	89	16:50
	Tue	10	E	1		95	95	16:54
June	Wed	11	AZ	1		99	99	16:58
	Thu	12	AZ	2		FM	100	17:02
	Fri	13	AZ	3		98	98	17:06
	Sat	14	D	1		93	93	17:10
	Sun	15	INAF	1		86	86	17:14
	Mon	16	INAF	2		77	77	17:18
	Tue	17	INAF	3		66	66	17:22
	Wed	18	INAF	4		55	55	17:26
	Thu	19	INAF	5			44	17:30
	Fri	20	INAF	6			33	17:34
	Sat	21	INAF	7			24	17:38
	Sun	22	INAF	8			15	17:41
								SPIE
								SPIE

- Of the 81 non-AZ nights, 8 nights go to LBTI (LEECH + Pis...)

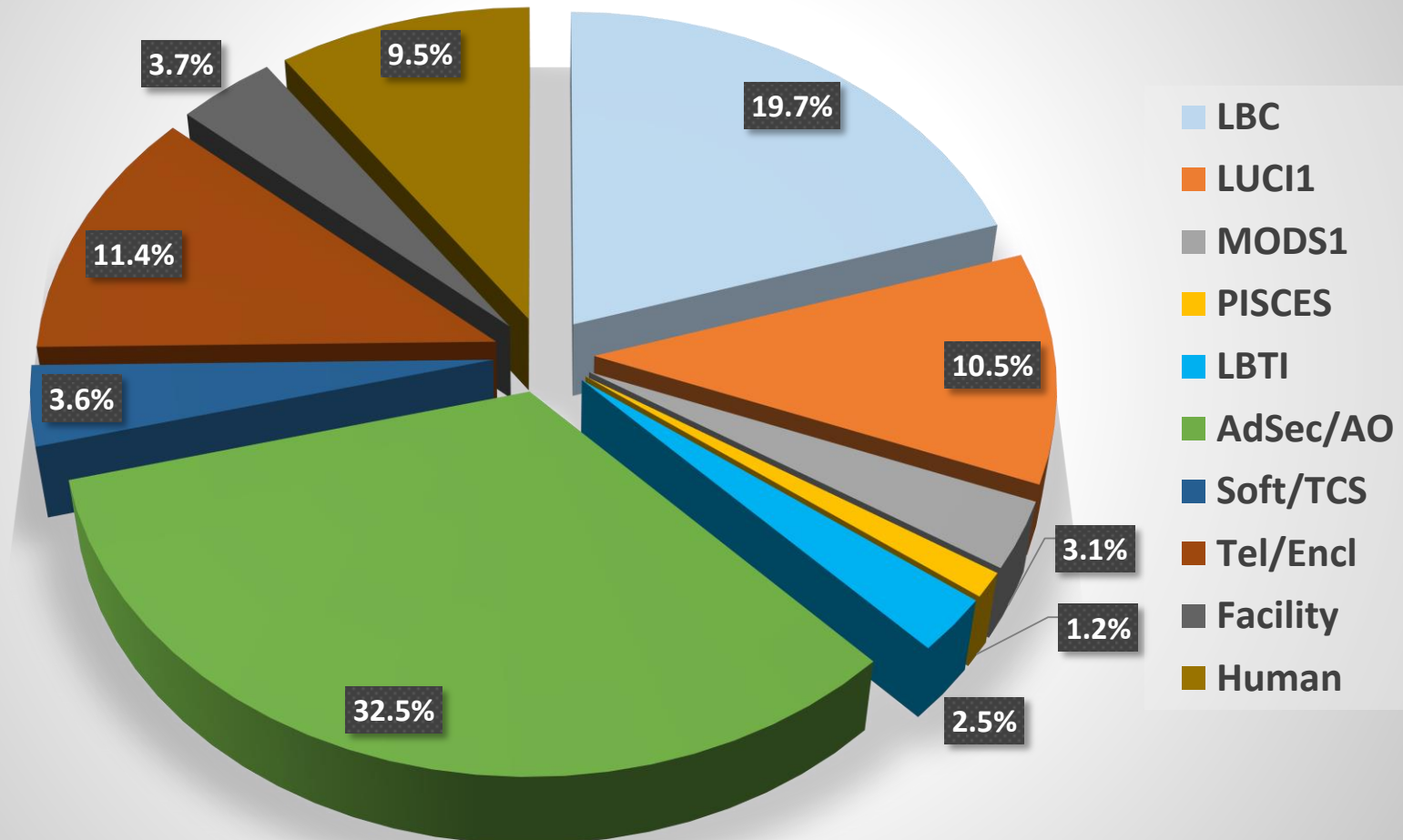
Efficiency... (13B)

2013 B - Where does the science night time go?



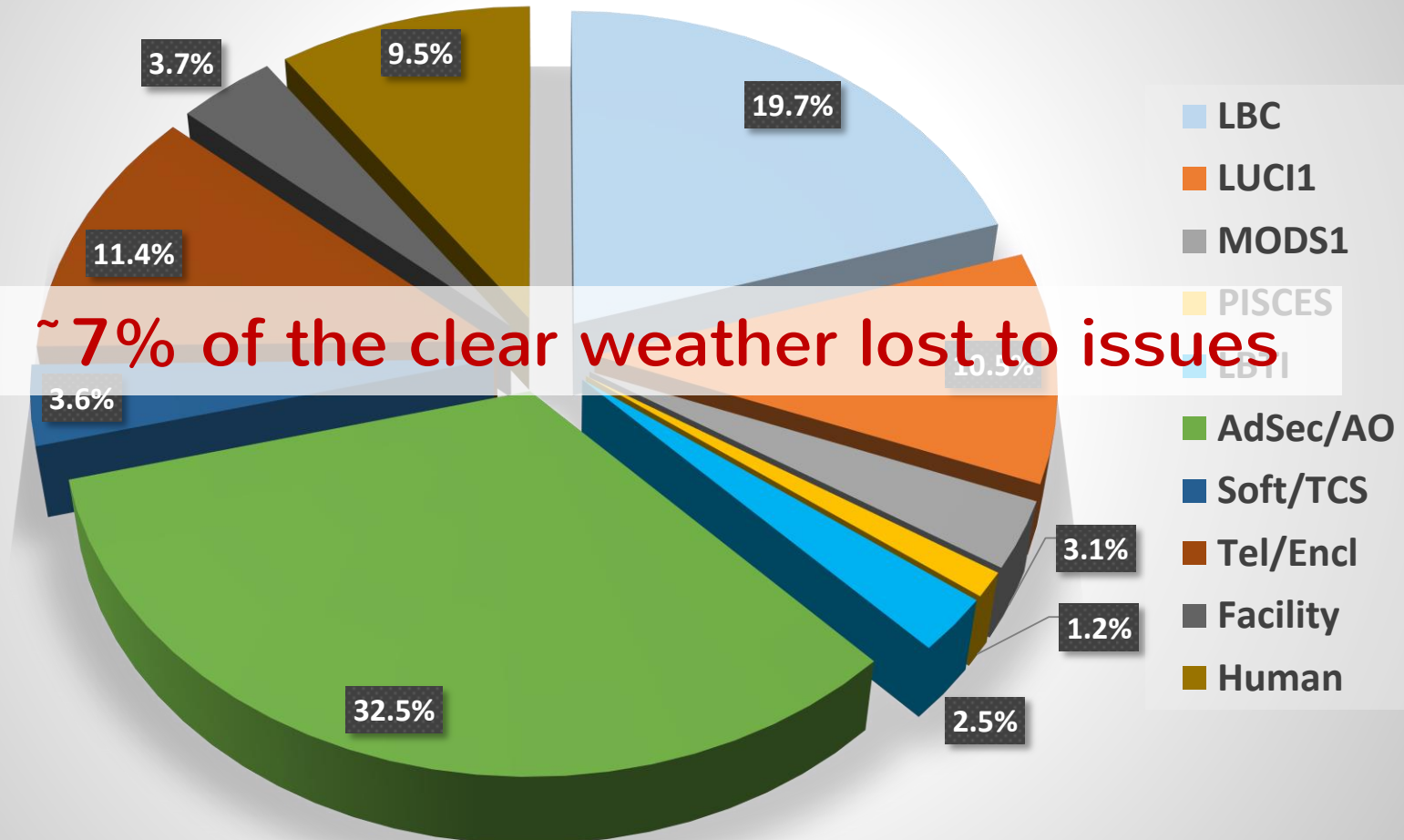
Efficiency... (13B)

2013 B - Downtime Sources



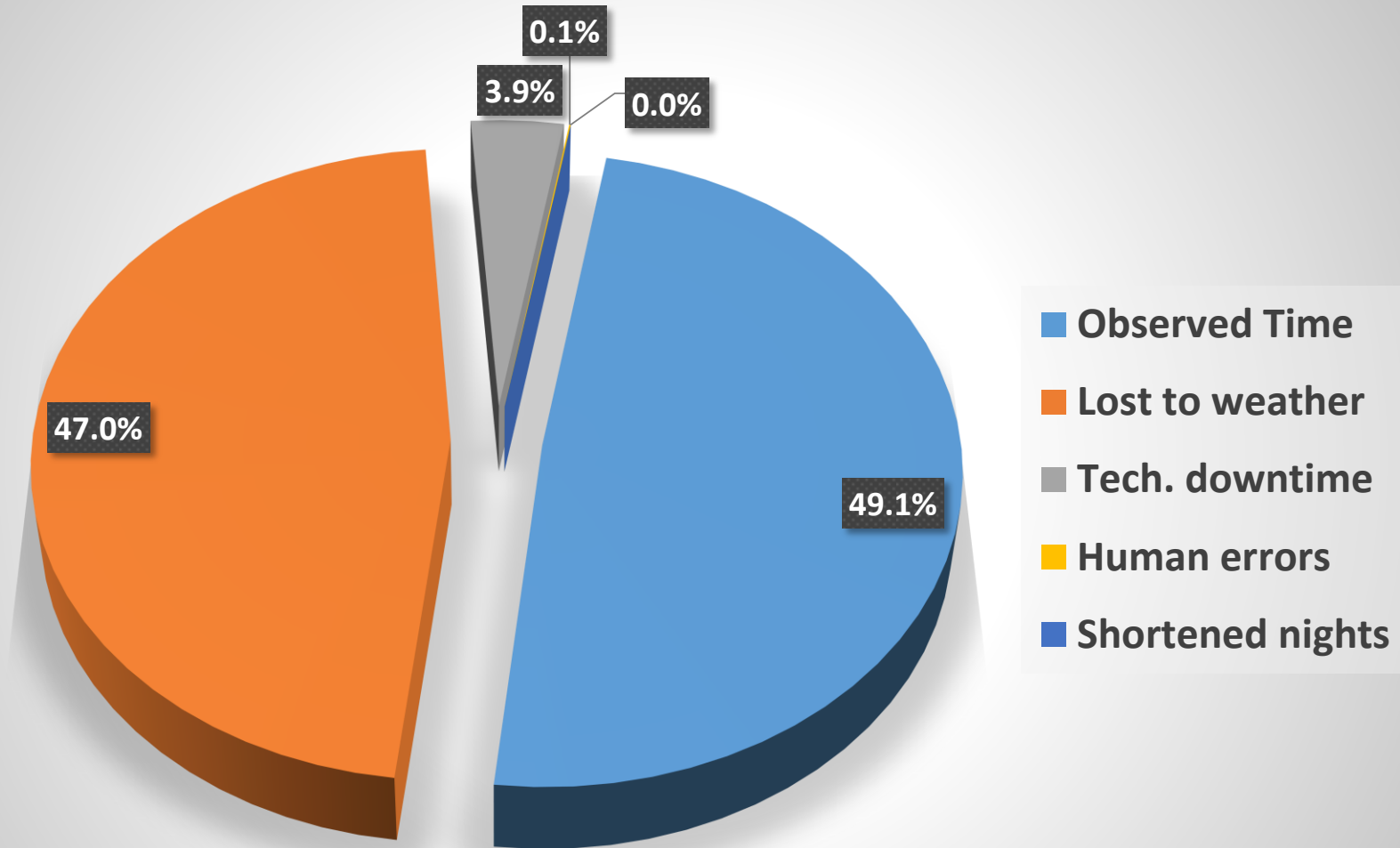
Efficiency... (13B)

2013 B - Downtime Sources

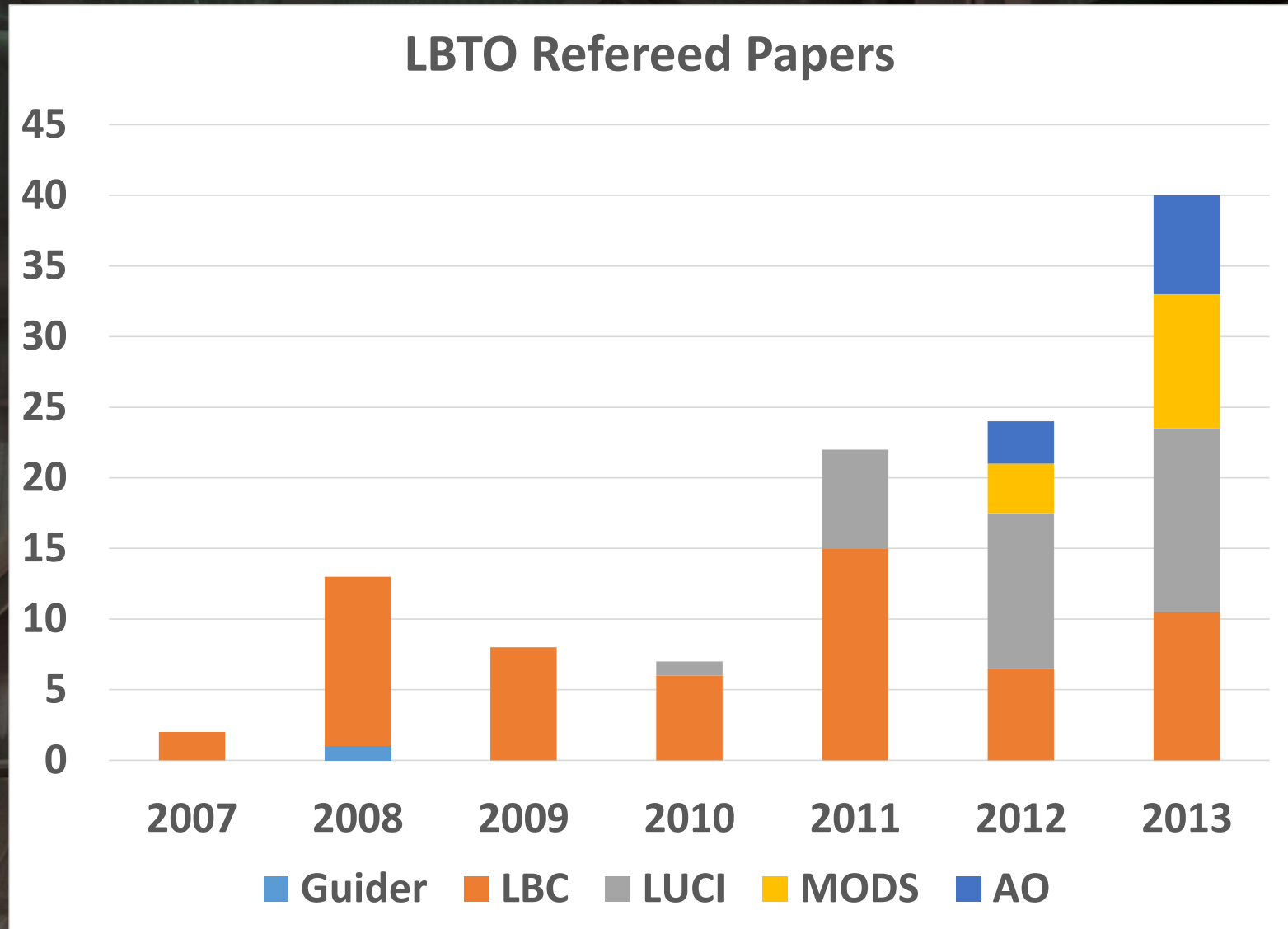


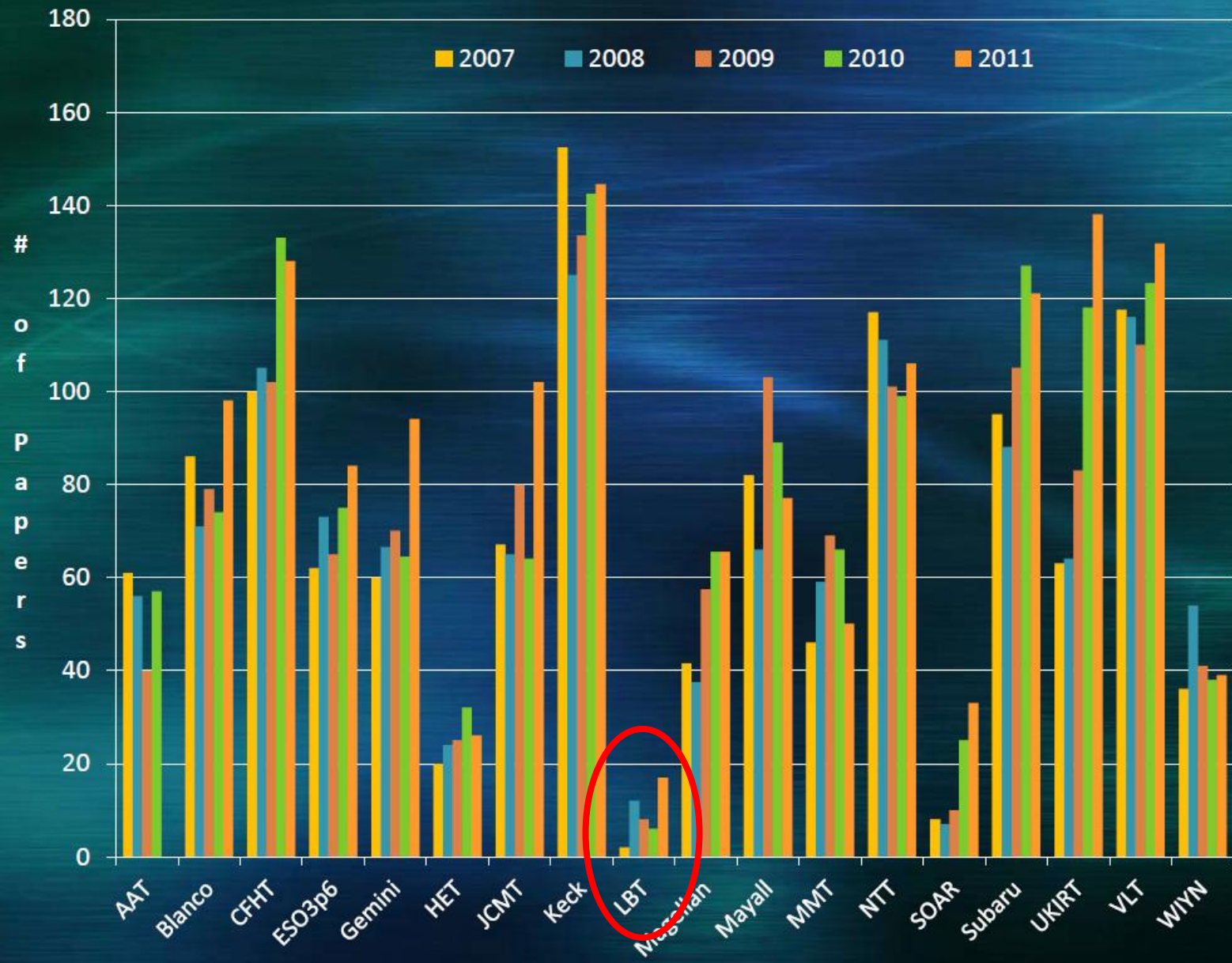
Efficiency... (14A)

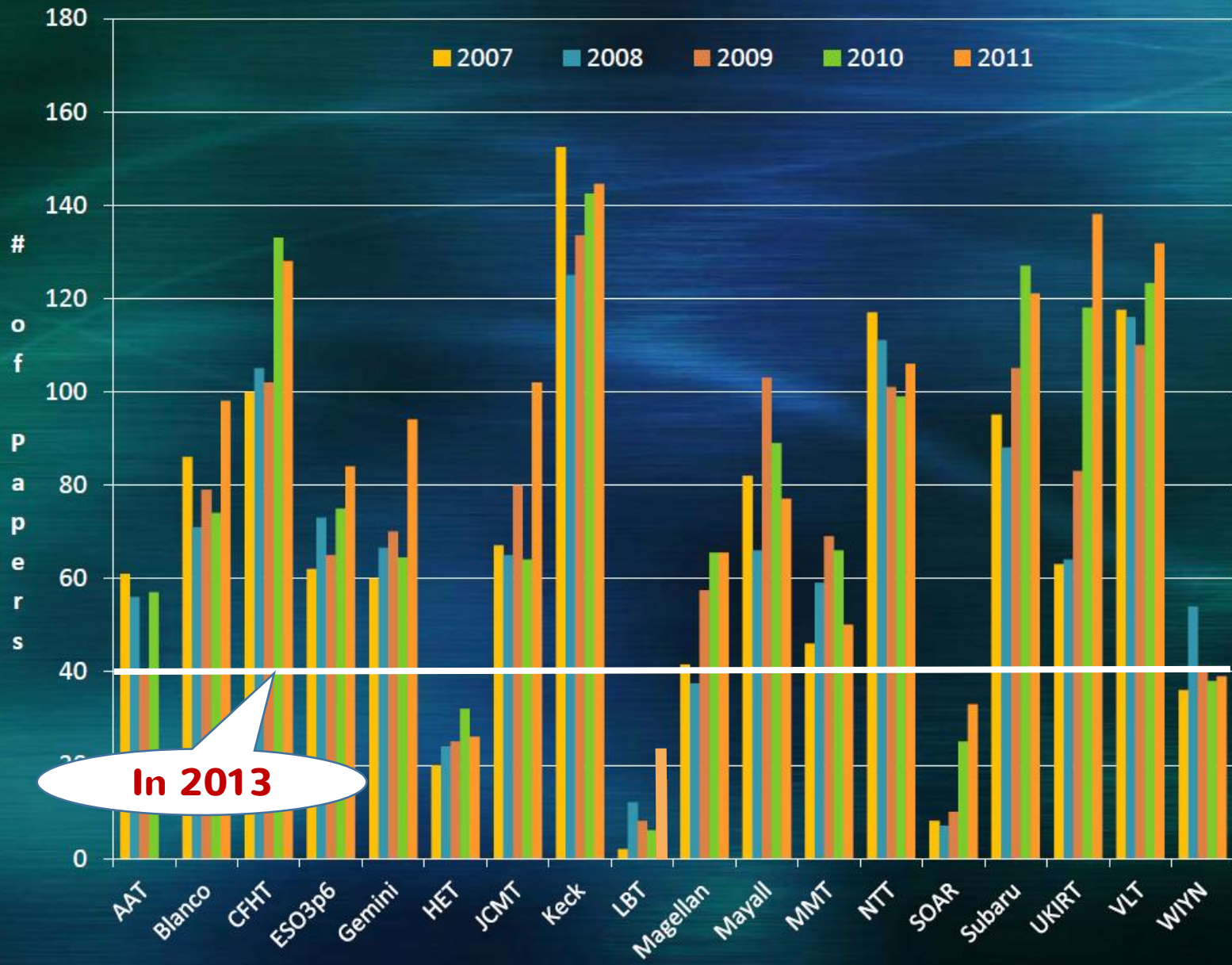
2014A- Where does the science night time go?



Publications? Not that bad!!!







What about money?

- Annual budget for operation: ~\$12.5M

